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EASA APPLICATION

STEPS

emailed 03/10/2016

Transport Canada / Transports Canada

DESIGN CHANGE APPROVAL APPLICATION

DEMANDE D'APPROBATION D'UNE MODIFICATION DE LA CONCEPTION

Legal name and address of applicant Nom et adresse légal du demandeur	Legal name and address of prospective holder Nom et adresse légal du titulaire éventuel	Name and address for billing purposes (if different than applicant) Nom et adresse aux fins de facturation (si différent du demandeur)
Aero Design Ltd. 9888A Malaspina Road Powell River, BC, Canada V8A 0G3	Aero Design Ltd. 9888A Malaspina Road Powell River, BC, Canada V8A 0G3	

Identification of aeronautical product / Identification du produit aéronautique

Make / Marque	Model / Modèle	Registration / Immatriculation	Serial No. / N° du série	Part No. / N° de la pièce
Airbus Helicopters	AS350	All eligible	All eligible	

Request for (check appropriate box) / Objet de la demande (Cochez les carrés selon le cas)

- ☐ STC / CTS
- ☐ STC (single serial number) / CTS (numéro de série simple)
- ☐ STC (multiple serial numbers) / CTS (numéros de série multiples)
- ☐ Type Certificate Revision / Revision de certificat de type
- ☑ Revision / Révision — No. / N° SH09-38 — Current Issue / Édition active 4
- ☐ Repair Design Approval (RDA) / Approbation de la conception de réparation (ACR)
- ☐ Repair Design Approval - Process Repair / ACR - Processus de réparation
- ☐ Part Design Approval (PDA) / Approbation de la conception de pièce (ACP)

Type Design Examination by Foreign Authority / Examen de la définition de type par autorité étrangère

- ☑ Application to a foreign authority is requested / La demande à une autorité étrangère est demandée.
- ☐ Type design examination of foreign change / Examen de la définition de type modification étrangère

Identify / Identifier: EASA - new STC

- ☐ Restricted Category / Catégorie restreinte — Type of Operation / Type d'opération

Title and brief description of modification, repair or replacement part, including effects of changes (use additional pages if necessary). Refer to CAR 521.155(b)(i) for details.
Titre et brève description de la modification, de la réparation ou de la pièce de rechange, y compris les effets des changements (utiliser des feuilles supplémentaires si nécessaire). Référez-vous à RAC 521.155(b)(i) pour des détails.

Installation of quick release maintenance step on mounting provisions installed in accordance with STC SH08-16; installation of maintenance peg step on aft cross tube; installation of fixed cabin steps on landing gear

Applicable Type Certificate (TC) / Certificat de type (CT) pertinent

TC No. / N° de CT	Issue No. / N° de l'édition	Identify State of Design / Identifier l'état de conception
H-83 (R.008)	23 (10)	EASA

The applicant is responsible for the control of product manufacture / Le demandeur est responsable du contôle de la fabrication du produit

- ☑ Yes / Oui
- ☐ No / Non

If no, identify who is responsible / Si non, identifier qui est responsable

Documentation to be submitted Documentation à soumettre	Applicant Demandeur Submitted Soumis Yes Oui	 No Non
Proposed certification basis Proposition de base de certification		✓
Certification plan in accordance with CAR 521.155(d) Plan de certification selon RAC 521.155(d)		✓

Applicant's remarks / Remarques du demandeur

Application to EASA for a new STC

I hereby certify that the information contained herein is correct and complete. I agree to pay charges as prescribed in Part 1, Subpart 4 of the CARs (CAR 104-Charges).

Je certifie que les renseignements figurant ci-dessus sont exacts et complets. Je m'engage à payer les redevances prescrites à la sous-partie 4 de la partie I du RAC (sous-partie 104 du RAC - Redevances).

Name and Signature of Applicant / Nom et signature du demandeur	Title / Poste	Date (yyyy-mm-dd) / Date (aaaa-mm-jj)
JEFF CLARKE JC	VICE-PRESIDENT	2016-10-03

26-0469 (1007-06)

Canada

Application for Approval of Supplemental Type Certificate

Data protection: Personal data included in this applicationis processed by EASA pursuant to Regulation (EC) No 45/2001 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data. It will be processed solely for the purposes of the performance, management and follow-up of the Application by the Agency, without prejudice to possible transmission to internal audit services, to the Court of Auditors, to the European Anti-Fraud Office (OLAF) for the purposes of safeguarding the financial interests of the European Union. The Applicant shall have the right of access to his personal data and the right to rectify any such data that is inaccurate or incomplete. Should the Applicant have any queries concerning the processing of his personal data, he shall address them to the Agency at the following address: dpo [at] easa.europa.eu. The Applicant shall have right of recourse at any time to the European Data Protection Supervisor.

1. Applicant's Reference

1.1 Your Reference	**827**

2. Applicant Address and Contact Data

2.1 Applicant Data

2.1.1Name and Address (registered (business) name and address/legal seat of the company)	Applicant Number	**300116**	(A)DOA Reference	
	(Company) Name	Aero Design Ltd.		
	Street / Nr	9888A Malaspina Road		
	Post Code	V8A 0G3		
	City	Powell River, BC		
	Country	Canada		
2.1.2 Contact Person (responsible for this application)	Title	☒ Mr ☐ Ms		
	Name	Clarke		
	First name	Jeff		
	Job title	Engineering Technologist		
	Phone/Fax	Phone: 604-483-2376	Fax: 604-483-2372	
	Email	jeff@aerodesign.ca		

Important Note: First time applicants need to submit a copy of the company's **Business Registration** or similar legal document stating name and seat of the company together with the application.In case the applicant is not a company but a natural person, a copy of the person's **ID or passport** needs to be provided with the first application.

2.2 Billing Data(may be left blank, if same as 2.1 Applicant Data)

2.2.1 Billing Address (For the receipt of EASA Fees and Charges Invoices. EASA invoices are issued via post-mail to the address provided here.)	(Company) Name	Same as in section 2.1.1 (other name only in exceptional cases)
	Street / Nr	
	PO Box	
	Post Code	
	City	
	Country	
2.2.2 Contact Person (Responsible for ensuring the EASA terms of payment are honoured. An electronic invoice copy will be issued to the email address indicated here.)	Title	☐ Mr ☒ Ms
	Name	Rekve
	First name	Wanda
	Job title	Office Manager
	Phone/Fax	Phone: 604-483-2376 Fax: 604-483-2372
	Email	wanda@aerodesign.ca

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Proprietary document. Printed copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

Application for Approval of Supplemental Type Certificate

2.3 Shipping Data (may be left blank, if same as 2.1 Applicant Data)		
2.3.1 Certificate Delivery Address (for the shipping of original EASA documents)	(Company) Name	
	Street / Nr	
	PO Box	
	Post Code	
	City	
	Country	
2.3.2 Contact Person (Shipping)	Title	☐ Mr ☐ Ms
	Name	
	First name	
	Job title	
	Phone/Fax	
	Email	

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Application for Approval of Supplemental Type Certificate

3. IdentificationofActivity

Supplemental Type Certificate ☒ Simple ☐ Standard ☐ Complex	For **revisions** to an STC,please complete an Application for **Major Change/Major Repair Design** or **Minor Change/Minor Repair Design**,as applicable. For a **transfer** to a new STC holder,please complete an Application for **Transfer of Certificate**.
Including change to approved parts of Flight Manual (FM)	☒ Yes ☐ No

4. Product Identification

4.1 Fees & Charges Information

Large Aeroplanes	**General Aviation**
☐ > 150 000 kg	☐ > 5 700 kg ≤ 22 000 kg (including commuter)
☐ > 50 000 kg ≤ 150 000 kg	☐ > 2 000 kg ≤ 5 700 kg
☐ > 22 000 kg ≤ 50 000 kg	☐ ≤ 2 000 kg
☐ > 5 700 kg ≤ 22 000 kg (excluding commuter)	☐ High Performance Aircraft (≤ 5 700 kg)
	☐ Very Light Aeroplane
	☐ Powered Sailplane
	☐ Sailplane
	☐ Light Sport Aeroplane
Rotorcraft, Balloons & Airships	**Propulsion**
☐ Large Rotorcraft	☐ Turbine Engine > 25 kN take-off thrust
☒ Medium Rotorcraft	☐ Turbine Engine ≤ 25 kN take-off thrust
☐ Small Rotorcraft	☐ Turbine Engine > 2000 kW take-off power
☐ Very Light Rotorcraft	☐ Turbine Engine ≤ 2000 kW take-off power
☐ Balloon	☐ Non-Turbine Engine
☐ Large Airship	☐ CS-22.H, CS VLR App. B Engine
☐ Medium Airship	☐ Propeller for use on aircraft > 5 700 kg MTOW
☐ Small Airship	☐ Propeller for use on aircraft ≤ 5 700 kg MTOW
	☐ CS-22J Class Propeller
	☐ APU (Parts & Appliances)

4.2 Applicability	Type Certificate Number	EASA.IM.R.008; FAA H9EU; TCCA H-83
	Type Certificate Holder	**Airbus Helicopters**
	Type Name	**AS350**
	Model(s)	**B, B1, B2, B3, BA, D**
4.3 Airworthiness Code	CS-27	

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Application for Approval of Supplemental Type Certificate

4.4 European Light Aircraft	☐ Non-ELA	☐ ELA 1 ☐ ELA 2	please consult the completion instructions for definitions of ELA 1 and ELA 2 aircraft

5. Original Approval (if applicable)		
5.1 Third Country Approval/Project N°	Approval/Project Number	SH09-38, Issue 4
	Issued by	Transport Canada
	Issued on	10 February 2015

6. Description	
6.1 Title	Installation of Quick Release Maintenance Step; Installation of Maintenance Peg Step; Installation of Fixed Cabin Step
6.2 Description	Installation of maintenance step on mounting provisions installed in accordance with TCCA STC SH08-16 (EASA STC application submitted). Installation of maintenance peg step on aft cross tube. Installation of fixed cabin steps on landing gear.
6.3 Affected Areas (including manuals)	See Certification Plan CP827, revision 1; Flight Manual Supplement FMS827.90 (Quick Release Maintenance Steps), Instructions for Continued Airworthiness ICA827.91 (Quick Release Maintenance Steps), ICA827.92 (Fixed Cabin Steps), ICA827.93 (Maintenance Peg Step)
6.4 Re-Investigations	None
6.5 Justification	Transport Canada has issued an STC

7. Part 21 demonstration of eligibility

I declare that this application is:

☐	Within the current approved scope of work of the applicant's DOA/ADOA		
☐	Undertaken by another person than the applicant for, or holder of, a certificate (Part 21.A.2)	Name	(Company) Name
		DOA/ADOA N°	DOA/ADOA N°
☐	Following an application for Design Organisation Approval (**FO.DOA.00080**)or Alternative Procedures to Design Organisation Approval(**FO.DOA.00081**).	Application Date	
		Project N°	if known
☐	Following an application for a change to the scope of work via EASA Form**FO.DOA.00081**or **FO.DOA.00082.**	Application Date	
		Project N°	if known
☒	**Without DOA/ADOA**		
	☐ Use of Article 8.2 of Regulation 748/2012		

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Application for Approval of Supplemental Type Certificate

☐	Covered by a Certification Programme in accordance with 21.A20(c) for ELA 1 aircraft or engine/propeller installed on an ELA 1 aircraft.
☒	Bilateral Agreement/Working Arrangement is in force

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Application for Approval of Supplemental Type Certificate

8. Applicant's declaration and acceptance of the General Conditions and Terms of Payment

I declare that I have the legal capacity to submit this application to EASA and that all information provided in this application form is correct and complete.

I have understood that I am submitting an application for which fees or charges will be levied by EASA in accordance with Commission Regulation (EC) on the fees and charges levied by the European Aviation Safety Agency, as last amended and available from http://easa.europa.eu/> Legislation > Fees & Charges.

I acknowledge that I have read and understood the Agency's Terms of Payment (see http://easa.europa.eu/> Legislation > Fees & Charges>General Conditions and Terms of Payment) and agree to abide by them. I declare to be aware that fees or charges, as well as all relevant travel costs must be paid whether or not the application is successful and that they might not be refundable. Moreover, I declare that I am aware of the consequences of non-payment.

03/10/2016 POWELL RIVER, BC, CANADA	JEFF CLARKE VICE PRESIDENT	Jeff Clark.
Date/Location	Name	Signature

Important Note: EASA cannot accept applications without signature. Please make sure that you sign the application.

This Application should be sent by fax, e-mail or regular mail to:

European Aviation Safety Agency
Applications and Outsourcing Services Department
Postfach 10 12 53
D-50452 Köln
Germany

Fax: +49 – (0)221 - 89990 ext. 4458
E-mail: STC@easa.europa.eu

Completion Instructions

Completion Instructions

Please double-click on the icon to access the completion instructions

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EASA
European Aviation Safety Agency

Your documentation

Certificate Delivery Team
Applicant Services Department
Resources and Support Directorate

Jeff Clarke
AERO DESIGN LTD.
9888A MALASPINA ROAD
POWELL RIVER BC V8A 0G3
CANADA

Cologne, 04 January 2017

Approval Number: 10060494/495/496
EASA Account Number: 300116
Application Type: EASA STC Approval

Please state the **approval number** and your **EASA account number** in all communication with the Agency

Dear Sir or Madam,

Please find enclosed the original(s) of your document(s) issued by the European Aviation Safety Agency.

Should you have further queries, please do not hesitate to contact us. Please assist us by always quoting your EASA account number in any correspondence with the Agency.

Right to Appeal
You have the right to appeal against this decision of the Agency in accordance with Articles 44-51 of Regulation (EC) No 216/2008. The appeal notification must be filed in writing at EASA within two months from the date of notification of this decision; you are required to pay a fee when lodging the appeal. The appeal notification form and further instructions are available from the EASA website: http://www.easa.europa.eu.

Yours faithfully,

The Applications Management Team

This is a computer generated document valid without an EASA signature.

SUPPLEMENTAL TYPE CERTIFICATE

10060496

This Supplemental Type Certificate is issued by EASA, acting in accordance with Regulation (EC) No. 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation and in accordance with Commission Regulation (EU) No. 748/2012 to:

AERO DESIGN LTD.

9888A MALASPINA ROAD
POWELL RIVER BC V8A 0G3
CANADA

and certifies that the change in the type design for the product listed below with the limitations and conditions specified meets the applicable Type Certification Basis and environmental protection requirements when operated within the conditions and limitations specified below:

Original Type Certificate Number: EASA.R.008
Type Certificate Holder: AIRBUS HELICOPTERS
Type: AS 350/EC 130
Model: AS 350 B1, AS 350 B2
AS 350 B3
AS 350 BA, AS 350 D
Original STC Number: TCCA SH09-38, ISSUE 4

Description of Design Change:
Installation of Quick Release Maintenance Step, Installation of Maintenance Peg Step, Installation of Fixed Cabin Step as detailed below.

See Continuation Sheet(s)

For the European Aviation Safety Agency

Date of Issue: 15 December 2016

Pier Giorgio COLOMBO
Medium Rotorcraft Section Manager

Configuration A- Quick Release Maintenance Step
Installation of External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is required for installation of Quick Release Maintenance Step. Installation of the Quick Release Maintenance Step to be completed in accordance with TCCA approved, Aero Design Ltd. Document Control List, DCL827-1, Revision 6, dated 31 July 2014, or later approved revision. External Attachment Provisions may remain installed if the basket installation is removed.
Configuration B- Maintenance Peg Step
Installation of Maintenance Peg Step to be completed in accordance with TCCA approved, Aero Design Ltd. Document Control List, DCL827-2, Revision 4, dated 31 July 2014, or later approved revision.
Configuration C- Fixed Cabin Step
Installation of Fixed Cabin Step to be completed in accordance with TCCA approved, Aero Design Ltd. Document Control List, DCL827-3, Revision 7, dated 31 July 2014, or later approved revision.
Data Pertinent to All Configurations
Any combination of Configurations A, B or C may be simultaneously installed.

EASA Certification Basis:
The Certification Basis (CB) for the original product remains applicable to this certificate/ approval.
The requirements for environmental protection and the associated certified noise and/ or emissions levels of the original product are unchanged and remain applicable to this certificate/ approval.

Associated Technical Documentation:
For Configuration A
Aero Design Ltd. Flight Manual Supplement FMS827.90, Revision 4, dated 31 July 2014
Aero Design Ltd. Instructions for Continued Airworthiness ICA827.91, Revision 5, dated 31 July 2014.
For Configuration B
Aero Design Ltd. Instructions for Continued Airworthiness ICA827.93, Revision 3, dated 31 July 2014.
For Configuration C
Aero Design Ltd. Instructions for Continued Airworthiness ICA827.92, Revision 4, dated 31 July 2014.

or later revisions of the above listed documents approved by EASA in accordance with the Technical Implementation Procedures of EU/ Canada Bilateral Agreement.

Limitations/Conditions:
Prior to installation of this design change it must be determined that the interrelationship between this design change and any other previously installed design change and/ or repair will introduce no adverse effect upon the airworthiness of the product.

- End -

SUPPLEMENTAL TYPE CERTIFICATE

10060496

This Supplemental Type Certificate is issued by EASA, acting in accordance with Regulation (EC) No. 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation and in accordance with Commission Regulation (EU) No. 748/2012 to:

AERO DESIGN LTD.

9888A MALASPINA ROAD
POWELL RIVER BC V8A 0G3
CANADA

and certifies that the change in the type design for the product listed below with the limitations and conditions specified meets the applicable Type Certification Basis and environmental protection requirements when operated within the conditions and limitations specified below:

Original Type Certificate Number: EASA.R.008
Type Certificate Holder: AIRBUS HELICOPTERS
Type: AS 350/EC 130
Model: AS 350 B1, AS 350 B2
AS 350 B3
AS 350 BA, AS 350 D
Original STC Number: TCCA SH09-38, ISSUE 4

Description of Design Change:
Installation of Quick Release Maintenance Step, Installation of Maintenance Peg Step, Installation of Fixed Cabin Step as detailed below.

See Continuation Sheet(s)

For the European Aviation Safety Agency

Date of Issue: 15 December 2016

Pier Giorgio COLOMBO
Medium Rotorcraft Section Manager

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Configuration A- Quick Release Maintenance Step
Installation of External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is required for installation of Quick Release Maintenance Step. Installation of the Quick Release Maintenance Step to be completed in accordance with TCCA approved, Aero Design Ltd. Document Control List, DCL827-1, Revision 6, dated 31 July 2014, or later approved revision. External Attachment Provisions may remain installed if the basket installation is removed.
Configuration B- Maintenance Peg Step
Installation of Maintenance Peg Step to be completed in accordance with TCCA approved, Aero Design Ltd. Document Control List, DCL827-2, Revision 4, dated 31 July 2014, or later approved revision.
Configuration C- Fixed Cabin Step
Installation of Fixed Cabin Step to be completed in accordance with TCCA approved, Aero Design Ltd. Document Control List, DCL827-3, Revision 7, dated 31 July 2014, or later approved revision.
Data Pertinent to All Configurations
Any combination of Configurations A, B or C may be simultaneously installed.

EASA Certification Basis:
The Certification Basis (CB) for the original product remains applicable to this certificate/ approval.
The requirements for environmental protection and the associated certified noise and/ or emissions levels of the original product are unchanged and remain applicable to this certificate/ approval.

Associated Technical Documentation:
For Configuration A
Aero Design Ltd. Flight Manual Supplement FMS827.90, Revision 4, dated 31 July 2014
Aero Design Ltd. Instructions for Continued Airworthiness ICA827.91, Revision 5, dated 31 July 2014.
For Configuration B
Aero Design Ltd. Instructions for Continued Airworthiness ICA827.93, Revision 3, dated 31 July 2014.
For Configuration C
Aero Design Ltd. Instructions for Continued Airworthiness ICA827.92, Revision 4, dated 31 July 2014.

or later revisions of the above listed documents approved by EASA in accordance with the Technical Implementation Procedures of EU/ Canada Bilateral Agreement.

Limitations/Conditions:
Prior to installation of this design change it must be determined that the interrelationship between this design change and any other previously installed design change and/ or repair will introduce no adverse effect upon the airworthiness of the product.

- End -

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AS350 STEPS - BRAZIL

CST 2017507-03

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Aero Design Ltd.
604-483-AERO (2376)

9888A Malaspina Road
Powell River, BC, Canada, V8A 0G3

23 March 2017

Transport Canada
Aircraft Certification Division
Suite 620
800 Burrard Street
Vancouver, BC
V6Z 2J8

Attn: Michael Chan

Your File :
Our File : 827

Re: Airbus Helicopters AS350/AS355 Cabin Steps – Brazilian STC application

Michael,

Please find attached the following documents in support of application for a new Brazilian STC:

✓ Modification Approval Request Application Form		
✓ ANAC STC Application Form F-300-11E		
✓ Transport Canada STC	SH09-38	Issue 4
✓ FAA STC	SR02770NY	26/02/16
✓ EASA STC	10060496	Rev. 0
✓ Certification Plan Signed undertaking / DOC / SOL	CP827	Rev. 1
✓ Document Control List (Quick Release Maintenance Steps Installation)	DCL827-1	Rev. 6
✓ Quick Release Maintenance Step Installation	82701	Rev. 2
✓ Extended Quick Release Maintenance Step Installation	82702	Rev. 2
✓ Flight Manual Supplement	FMS827.90	Rev. 4
✓ Instructions for Continued Airworthiness	ICA827.91	Rev. 5
✓ MSI 53 Review of ICA827.91 Rev. 5		
✓ Document Control List (Quick Release Maintenance Steps Fabrication)	DCL827-11	Rev. 4
✓ Step Assembly	82716	Rev. 1
✓ Step Bracket Fabrication	82722	Rev. 1
✓ Extended Step Assembly	82711	Rev. 1
✓ Step Bracket Fabrication	82720	Rev. 2
✓ Engineering Report	ER827.02	Rev. 0
✓ Document Control List (Maintenance Peg Step Installation and Fabrication)	DCL827-2	Rev. 4
✓ Maintenance Peg Step Installation	82707	Rev. 2
✓ Instructions for Continued Airworthiness	ICA827.93	Rev. 3
✓ MSI 53 Review of ICA827.93 Rev. 3		
✓ Step Assembly	82740	Rev. 2
✓ Engineering Report	ER827.01	Rev. 0

Aero Design Ltd.
604-483-AERO (2376)

9888A Malaspina Road
Powell River, BC, Canada, V8A 0G3

Document Control List (Fixed Steps Installation)	DCL827-3	Rev. 7
Long Cabin Step Installation	82705	Rev. 2
Short Cabin Step Installation	82706	Rev. 2
Full Length Cabin Step Installation	82709	Rev. 1
Short Commuter Step Installation	82750	Rev. 1
Long Commuter Step Installation	82751	Rev. 1
Full Length Commuter Step Installation	82752	Rev. 1
Short Cabin Step Installation – Dart Conversion	82770	Rev. 1
Long Cabin Step Installation – Dart Conversion	82771	Rev. 1
Short Cabin Step Installation – Dart Conversion	82772	Rev. 1
Long Cabin Step Installation – Dart Conversion	82773	Rev. 1
Instructions for Continued Airworthiness	ICA827.92	Rev. 4
MSI 53 Review of ICA827.92 Rev. 4		
Document Control List (Fixed Steps Fabrication)	DCL827-13	Rev. 6
Short Cabin Step Assembly	82715	Rev. 2
Long Cabin Step Assembly	82717	Rev. 1
Commuter Cabin Step Assembly	82718	Rev. 2
Extra Short Cabin Step Assembly	82719	Rev. 0
Bracket Fabrication	82723	Rev. 2
Short Cabin Step Parts Fabrication	82733	Rev. 2
Cabin Step Parts Fabrication	82734	Rev. 1
Commuter Cabin Step Parts Fabrication	82736	Rev. 1
Commuter Step Assembly	82760	Rev. 1
Bracket Fabrication	82765	Rev. 2
Bracket (Dart Long)	82780	Rev. 1
Cap (Dart Long)	82781	Rev. 1
Bracket (Dart Short)	82782	Rev. 1
Cap (Dart Short)	82783	Rev. 1
Cap (Old Profile, Dart Short)	82784	Rev. 1
Bracket (Old Profile, Dart Long)	82785	Rev. 1
Cap (Old Profile, Dart Long)	82786	Rev. 1
Engineering Report	ER827.02	Rev. 0
Engineering Report	ER827.03	Rev. 1
Flight Test Report (TCCA)	(none)	(none)

A CD with the above data is included for submission to ANAC.

Regards,

Jeff Clarke, P.Tech.(Eng.)
Vice President

Encl.

APPLICATION FOR CERTIFICATION WORKS	AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL Gerência-Geral de Certificação de Produtos Aeronáuticos	
1. NAME AND ADDRESS OF APPLICANT:	2. APPLICATION FOR:	3. PRODUCT INVOLVED:
Aero Design Ltd. **9888A Malaspina Road** **Powell River, BC, V8A 0G3** **Canada** OBS: Please include contact information, such as phone number, fax, e-mail, etc.	☐ Type Certification	☐ Aircraft
	☐ Production Certification	☐ Engine
	☒ Suppl. Type Certification	☐ Propeller
	☐ Aeronautical Products Approval	☒ Parts / Components
		☐ Others

4. TYPE CERTIFICATION:

A. Model Designations (s)

OBS: All models listed are to be completely described in the required technical data, including drawings, representing the design, material, specifications, construction, performance of the aircraft, aircraft engine, propeller & parts.

5. PRODUCTION CERTIFICATION:

A. Factory address (if different from 1 above)

B. Type of request:

☐ original request ☐ amendment to the original certificate No

C. Applicant is:

☐ holder ☐ licensee

D. Remarks:

I. If necessary, list the additional details on products or service for which the certification is required.

II. List the documents attached to this application.

6. SUPPLEMENTAL TYPE CERTIFICATION:

A. Make and model designation of product to be modified:

Airbus Helicopters AS350 B, BA, B1, B2, B3

Airbus Helicopters AS355 D, E, F, F1, F2, N, NP

B. Description of modification:

Installation of quick release maintenance step; Installation of maintenance peg step; Installation of fixed cabin step.

C.: Will data be available for sale or release to other persons?

☐ yes ☒ no

D.: Will parts be manufactured for sale?

☒ yes ☐ no

7. ATTESTATION OF APPROVED AERONAUTICAL PRODUCT (except aircraft, aircraft engine and propeller)

A. Parts or components designation

B. Specification adopted

Obs.: For a betther identification of the product, techinical data (drawings, test reports, material specification) must be included.

C. Factory address

8. Applicant statement, signature and date:

I, **Jeff Clarke** certify that above informations are true.

Signature

Vice President
[Title]

23 / 03 / 17
Date

jeff@aerodesign.ca, 604-483-2376
email and phone

Transport Canada / Transports Canada

DESIGN CHANGE APPROVAL APPLICATION

DEMANDE D'APPROBATION D'UNE MODIFICATION DE LA CONCEPTION

Legal name and address of applicant Nom et adresse légal du demandeur	Legal name and address of prospective holder Nom et adresse légal du titulaire éventuel	Name and address for billing purposes (if different than applicant) Nom et adresse aux fins de facturation (si différent du demandeur)
Aero Design Ltd. 9888A Malaspina Road Powell River, BC, Canada V8A 0G3	Aero Design Ltd. 9888A Malaspina Road Powell River, BC, Canada V8A 0G3	

Identification of aeronautical product / Identification du produit aéronautique

Make / Marque	Model / Modèle	Registration / Immatriculation	Serial No. / N° du série	Part No. / N° de la pièce
Airbus Helicopters	AS350/355 (all)	All eligible	All eligible	

Request for (check appropriate box) / Objet de la demande (Cochez les carrés selon le cas)

- ☐ STC / CTS
- ☐ STC (single serial number) / CTS (numéro de série simple)
- ☐ STC (multiple serial numbers) / CTS (numéros de série multiples)
- ☐ Type Certificate Revision / Revision de certificat de type
- ☑ Revision / Révision — No. / N° SH09-38 — Current Issue / Édition active 4
- ☐ Repair Design Approval (RDA) / Approbation de la conception de réparation (ACR)
- ☐ Repair Design Approval - Process Repair / ACR - Processus de réparation
- ☐ Part Design Approval (PDA) / Approbation de la conception de pièce (ACP)

Type Design Examination by Foreign Authority / Examen de la définition de type par autorité étrangère

- ☑ Application to a foreign authority is requested / La demande à une autorité étrangère est demandée.
- ☐ Type design examination of foreign change / Examen de la définition de type modification étrangère

Identify / Identifier: Brazil - new STC

- ☐ Restricted Category / Catégorie restreinte — Type of Operation / Type d'opération

Title and brief description of modification, repair or replacement part, including effects of changes (use additional pages if necessary). Refer to CAR 521.155(b)(i) for details.
Titre et brève description de la modification, de la réparation ou de la pièce de rechange, y compris les effets des changements (utiliser des feuilles supplémentaires si nécessaire). Référez-vous à RAC 521.155(b)(i) pour des détails.

Installation of quick release maintenance step on mounting provisions installed in accordance with STC SH08-16; installation of maintenance peg step on aft cross tube; installation of fixed cabin steps on landing gear

Applicable Type Certificate (TC) / Certificat de type (CT) pertinent

TC No. / N° de CT	Issue No. / N° de l'édition	Identify State of Design / Identifier l'état de conception
H-83, H-87	23, 9	EASA

The applicant is responsible for the control of product manufacture / Le demandeur est responsable du contôle de la fabrication du produit

- ☑ Yes / Oui
- ☐ No / Non

If no, identify who is responsible / Si non, identifier qui est responsable

Documentation to be submitted Documentation à soumettre	Applicant Demandeur Submitted Soumis Yes Oui	 No Non
Proposed certification basis Proposition de base de certification		✓
Certification plan in accordance with CAR 521.155(d) Plan de certification selon RAC 521.155(d)		✓

Applicant's remarks / Remarques du demandeur

Application to ANAC in Brazil for a new STC

I hereby certify that the information contained herein is correct and complete. I agree to pay charges as prescribed in Part 1, Subpart 4 of the CARs (CAR 104-Charges).

Je certifie que les renseignements figurant ci-dessus sont exacts et complets. Je m'engage à payer les redevances prescrites à la sous-partie 4 de la partie I du RAC (sous-partie 104 du RAC - Redevances).

Name and Signature of Applicant / Nom et signature du demandeur	Title / Poste	Date (yyyy-mm-dd) / Date (aaaa-mm-jj)
JEFF CLARKE Jeff Clark.	VICE + PRESIDENT	2017-03-23

Canada

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
	INSTALLATION DOCUMENTS	
82701	Quick Release Maintenance Step Installation	2
82702	Extended Quick Release Maintenance Step Installation	2
FMS827.90	Flight Manual Supplement	4
ICA827.91	Instructions for Continued Airworthiness	5
	FABRICATION DOCUMENTS	
DCL827-11	Document Control List for Quick Release Maintenance Step Fabrication	4

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By D.B. Wright
Appr'l No. SH09038
Appr'l Date 2009-08-07
Issue No. 4
Issue Date 2015-02-10
YY - MM - DD

ORIGINAL DATE:
31 October 2008
REVISION DATE:
31 July 2014

Aero Design Ltd.
9888A Malaspina Road
Powell River, BC, Canada, V8A 0G3
Tel: 604.483.2376 www.aerodesign.ca

SHEET 1 OF 1

Airbus Helicopters (Eurocopter)
AS350 & AS355 Series
Quick Release Maintenance Steps Installation

DCL827-1

Rev. **6**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
	INSTALLATION DOCUMENTS	
✓ 82707	Maintenance Peg Step Installation	2
✓ ICA827.93	Instructions for Continued Airworthiness	3
	FABRICATION DOCUMENTS	
✓ 82740	Peg Step Fabrication	2
	ENGINEERING DOCUMENTS	
✓ ER827.01	Engineering Report	2

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By
Appr'l No. SH09-38
Appr'l Date 2009-08-07
Issue No. 4
Issue Date 2015-02-10
YY - MM - DD

ORIGINAL DATE:
31 October 2008
REVISION DATE:
31 July 2014

Aero Design Ltd.
9888A Malaspina Road
Powell River, BC, Canada, V8A 0G3
Tel: 604.483.2376 www.aerodesign.ca

SHEET 1 OF 1

Airbus Helicopters (Eurocopter)
AS350 & AS355 Series
Maintenance Peg Step Installation

DCL827-2

Rev. **4** ✓

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
	INSTALLATION DOCUMENTS	
✓ 82705	Long Cabin Step Installation	2
✓ 82706	Short Cabin Step Installation	2
✓ 82709	Full Length Cabin Step Installation	1
✓ 82750	Short Commuter Cabin Step Installation	1
✓ 82751	Long Commuter Cabin Step Installation	1
✓ 82752	Full Length Commuter Cabin Step Installation	1
✓ 82770	Short Cabin Step Installation – DART Conversion	1
✓ 82771	Long Cabin Step Installation – DART Conversion	1
✓ 82772	Short Cabin Step Installation – DART Conversion (Old Profile)	1
✓ 82773	Long Cabin Step Installation – DART Conversion (Old Profile)	1
✓ ICA827.92	Instructions for Continued Airworthiness	4
	FABRICATION DOCUMENTS	
DCL827-13	Document Control List for Fixed Cabin Steps Fabrication	6

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By
Appr'l No. 5409-38
Appr'l Date 2009-08-07
Issue No. 4
Issue Date 2015-02-10
YY - MM - DD

ORIGINAL DATE:
31 October 2008
REVISION DATE:
31 July 2014

Aero Design Ltd.
9888A Malaspina Road
Powell River, BC, Canada, V8A 0G3
Tel: 604.483.2376 www.aerodesign.ca

SHEET 1 OF 1

Airbus Helicopters (Eurocopter)
AS350 & AS355 Series
Fixed Cabin Steps
Installation

DCL827-3

Rev. **7** ✓

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
	FABRICATION DOCUMENTS	
✓ 82716	Step Assembly	1
✓ 82722	Step Bracket Fabrication	1
✓ 82711	Extended Step Assembly	1
✓ 82720	Step Bracket Fabrication	2
	ENGINEERING DOCUMENTS	
✓ ER827.02	Engineering Report	0

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By D.B. Wright
Appr'l No. 5409038
Appr'l Date 2009-08-07
Issue No. 4
Issue Date 2015-02-10
YY - MM - DD

ORIGINAL DATE:
31 October 2008
REVISION DATE:
31 July 2014

Aero Design Ltd.
9888A Malaspina Road
Powell River, BC, Canada, V8A 0G3
Tel: 604.483.2376 www.aerodesign.ca

SHEET 1 OF 1

Airbus Helicopters (Eurocopter)
AS350 & AS355 Series
Quick Release Maintenance Steps
Fabrication

DCL827-11

Rev. **4** ✓

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
	FABRICATION DOCUMENTS	
82715	Short Cabin Step Assembly	2
82717	Long Cabin Step Assembly	1
82718	Commuter Cabin Step Assembly	2
82719	Extra Short Cabin Step Assembly	0
82723	Bracket Fabrication	2
82733	Short Cabin Step Parts Fabrication	2
82734	Cabin Step Parts Fabrication	1
82736	Commuter Cabin Step Parts Fabrication	1
82760	Commuter Step Assembly	1
82765	Bracket Fabrication	2
82780	Bracket (DART Long)	1
82781	Cap (DART Long)	1
82782	Bracket (DART Short)	1
82783	Cap (DART Short)	1
82784	Cap (Old Profile, DART Short)	1
82785	Bracket (Old Profile, DART Long)	1
82786	Cap (Old Profile, DART Long)	1
	ENGINEERING DOCUMENTS	
ER827.02	Engineering Report	0
ER827.03	Engineering Report	1
	Flight Test Report – Transport Canada	

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By
Appr'l No. SH0038
Appr'l Date 2009-08-07
Issue No. 4
Issue Date 2015-02-10
YY - MM - DD

ORIGINAL DATE:
31 October 2008
REVISION DATE:
31 July 2014

Aero Design Ltd.
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Tel: 604.483.2376 www.aerodesign.ca

SHEET 1 OF 1

Airbus Helicopters (Eurocopter)
AS350 & AS355 Series
Fixed Cabin Steps
Fabrication

DCL827-13

Rev. **6**

AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL
Rua Laurent Martins, 209, - Bairro Jardim Esplanada, São José dos Campos/SP, ZIP 12242-431 - Brazil
Phone: 55 12 3203-6600 - https://www.anac.gov.br

Oficio nº 569(SEI)/2017/GCPR/GGCP/SAR-ANAC

São José dos Campos, 05 July 2017.

Mr. Jeef Clarke
Vice Presidente
Aero Design, Ltd.
9888A Malaspina Road
Powell River, BC, V8A 0G3
Canada

Subject: **Brazilian validation of TCCA STC # SH09-38.**

Ref.: Process No. 00066.510355/2017-02 - ANAC Project Number H.02-4860-0.
If you reply to this Office, expressly indicate Process No.00066.510355/2017-02 SEI No. 0834609

Enclosure: CST # 2017S07-03.

Dear Sir,

1. Please find enclosed the Brazilian Supplemental Type Certificate (CST) # 2017S07-03 related to the Brazilian validation of TCCA STC # SH09-38 (Installation os quick release maintenance; Installation of maintenance peg step; Installation of fixed cabin step), applicable to the aircraft models as listed in the Approved Model List (AML).

Yours sincerely,

Cesar Rodrigues Hess
Manager, Certification Programs Branch

Cópies:
PST = 1
Aero (e-mail: jeff@aerodesign.ca)
TCCA (e-mail: michael.chan@tc.gc.ca)

Documento assinado eletronicamente por **CESAR RODRIGUES HESS, Gerente de Programas de Certificação**, em 05/07/2017, às 15:11, conforme horário oficial de Brasília, com fundamento no art. 6º, § 1º, do Decreto nº 8.539, de 8 de outubro de 2015.

A autenticidade deste documento pode ser conferida no site http://sistemas.anac.gov.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0, informando o código verificador **0834609** e o código CRC **33746D4A**.

CERTIFICADO SUPLEMENTAR DE TIPO

(Supplemental Type Certificate)

NÚMERO: 2017S07-03

(Number)

Este Certificado, emitido com base na Lei n° 7565 "Código Brasileiro de Aeronáutica", de 19 de dezembro de 1986,
This Certificate, issued in the basis of the Law No 7565 "Código Brasileiro de Aeronáutica", dated 19 December 1986,

é conferido ao (à): Aero Design Ltd.
is granted to: 9888A Malaspina Road
Powell Rives, British Columbia
Canada V8A 0G3

por ter a modificação ao projeto de tipo do produto abaixo citado, observadas as limitações e condições especificadas,
for having the change to the type design of the product mentioned below, with the limitations and conditions there for as specified hereon,

satisfeito aos requisitos de aeronavegabilidade aplicáveis.
met the applicable airworthiness requirements.

Produto Original - Número do Certificado de Tipo: * See attached ANAC Approved Model List (AML), Rev. I.R., dated 03 July 2017, or later approved revision.
Original Product - Type Certificate No:

Fabricante: *
Manufacturer:

Modelo(s): *
Model (s):

DESCRIÇÃO DA MODIFICAÇÃO AO PROJETO DE TIPO:

Description of Type Design Change:

Installation of Quick Release Maintenance Step, Maintenance Peg Step and Fixed Cabin Step in accordance with the applicable Aero Design Ltd. Document Control List indicated in the Limitations and Conditions section.

This CST validates in Brazil the STC No. SH09-38, issued by TCCA (Canada).

LIMITAÇÕES E CONDIÇÕES:

Limitations and Conditions:

See continuation sheet for applicable data.

DATAS: *Dates of:*
Do requerimento: 23 Mar. 2017 *Aplication:*
Da emissão: 03 July 2017 *Issuance:*

Da reemissão:
Reissuance:

Da emenda:
Amendment:

MÁRIO IGAWA
Gerente-Geral, Certificação de Produto Aeronáutico
(General Manager, Aeronautical Product Certification)

ROBERTO JOSÉ SILVEIRA HONORATO
Superintendente de Aeronavegabilidade
(Airworthiness Superintendent)

Nota:
(Note:)

a) Este Certificado e os dados técnicos com base nos quais ele foi emitido são válidos até que sejam cancelados,
(This Certificate and the supporting technical data used for approval shall remain in effect until surrended,
suspensos, revogados ou um prazo limite seja estabelecido pela Agência Nacional de Aviação Civil.
suspended, revoked or a termination date is otherwise established by the Agência Nacional de Aviação Civil.)

b) No caso de transferência de propriedade deste Certificado, o transferente deve preencher o quadro "Endosso
(In case of transfer of the property of this Certificate, the grantor should fill the blanks of
de Transferência", e o adquirente deve enviar este Certificado à Gerência Geral de Certificação de
"Transfer Endorsement", and the transferee must remit this Certificate to the Gerência Geral de Certificação de
Produto Aeronáutico para que seja reemitido em seu nome.
Produto Aeronáutico to permit reissuance of the Certificate in his name.)

ENDOSSO DE TRANSFERÊNCIA
(Transfer Endorsement)

Transfiro a propriedade deste Certificado Suplementar de Tipo para:
(I transfer the property of this Supplemental Type Certificate to:)

ADQUIRENTE
(Transferee)

Nome: .....
(Name:)

Rua: .....
(Street:)

CEP: ..... **Cidade:** ..... **Estado:**..... **País:** .....
(Zip:) *(City:)* *(State:)* *(Country:)*

TRANSFERENTE
(Grantor)

Nome: .....
(*Name:*)

Rua: .....
(*Street:*)

CEP: ..... **Cidade:** ..... **Estado:**..... **País:** .....
(*Zip:*) (*City:*) (*State:*) (*Country:*)

Data de Transferência: .....
(*Date of Transfer:*)

Assinatura do Transferente: .....
(*Signature of the Grantor:*)

Nome: .....
(*Name:*)

Cargo: .....
(*Function:*)

ANAC
AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL

Folha de Continuação ao
(*Continuation Sheet to*)

CERTIFICADO SUPLEMENTAR DE TIPO
(*Supplemental Type Certificate*)

NÚMERO: 2017S07-03
(Number)

LIMITAÇÕES E CONDIÇÕES:
Limitations and Conditions:

Configuration A – Quick Release Maintenance Step

Installation of External Attachment Provisions (Configuration A) in accordance with ANAC CST No. 2017S07-XX (which validates the TCCA STC No. SH08-16) is required for the installation of the Quick Release Maintenance Step.

Installation of the Quick Release Maintenance Step in accordance with Aero Design Ltd. Document Control List, Document No. DCL827-1, Rev. 6, dated 31 July 2014, or later approved revision.

External Attachment Provisions may remain installed if the Step Installation is removed.

Configuration B – Maintenance Peg Step

Installation of the Maintenance Peg Step in accordance with Aero Design Ltd. Document Control List, Document No. DCL827-2, Rev. 4, dated 31 July 2014, or later approved revision.

Configuration C – Fixed Cabin Step

Installation of the Fixed Cabin Step in accordance with Aero Design Ltd. Document Control List, Document No. DCL827-3, Rev. 7, dated 31 July 2014, or later approved revision.

I. The approval of this type design change should not be extended to other rotorcraft of this model on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in Type Design, will introduce no adverse effect upon the airworthiness of that rotorcraft.

II. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

III. Any combination of Configurations A, B or C may be simulyaneously installed.

IV. The mantainance of the rotorcraft shall be performed in accordance with the applicable Instructions for Continued Airworthiness (ICA):

- For Configuration A: Aero Design Ltd. Document No. ICA 827.91, Rev. 5, dated 31 July 2014, or later accepted revision; and/or
- For Configuration B: Aero Design Ltd. Document No. ICA 827.93, Rev. 3, dated 31 July 2014, or later accepted revision; and/or
- For Configuration C: Aero Design Ltd. Document No. ICA 827.92, Rev. 4, dated 31 July 2014, or later accepted revision.

V. Operation for **Configuration A** must be performed in accordance with the TCCA approved Rotorcraft Flight Manual Supplement (RFMS), Aero Design Ltd. Document No. FMS827.90, Rev. 4, dated 31 July 2014, or later approved revision.

VI. A copy of this Certificate, the Supplement referred on item V above, if applicable, and the ANAC Approved Model List (AML) for CST No. 2017S07-03 shall be maintained as part of the permanent records for the modified rotorcraft.

----------END----------

Documento assinado eletronicamente por **MARIO IGAWA, Gerente-Geral de Certificação de Produtos Aeronáuticos**, em 05/07/2017, às 15:55, conforme horário oficial de Brasília, com fundamento no art. 6º, § 1º, do Decreto nº 8.539, de 8 de outubro de 2015.

Documento assinado eletronicamente por **ROBERTO JOSÉ SILVEIRA HONORATO, Superintendente de Aeronavegabilidade**, em 07/07/2017, às 18:15, conforme horário oficial de Brasília, com fundamento no art. 6º, § 1º, do Decreto nº 8.539, de 8 de outubro de 2015.

A autenticidade deste documento pode ser conferida no site http://sistemas.anac.gov.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0, informando o código verificador **0827763** e o código CRC **0FAC7559**.

ANAC LISTA DE MODELOS APROVADOS (LMA) PARA CST

(ANAC APPROVED MODEL LIST (AML) FOR (CST))

NÚMERO: 2017S07-03

(Number)

ITEM	ROTORCRAFT MAKE	ROTORCRAFT MODEL(S)	TYPE CERTIFICATE NUMBER
1	Airbus Helicopters	AS 350 B	R.008 (EASA)
2	Airbus Helicopters	AS 350 B1, AS 350 B2, AS 350 B3, AS 350 BA	8812 (ANAC)
3	Airbus Helicopters	AS 355 F, AS 355 F1, AS 355 F2, AS 355 N, AS 355 NP	8809 (ANAC)

Aprovação ANAC:
(ANAC Approval:)

MÁRIO IGAWA
Gerente-Geral, Certificação de Produto Aeronáutico
(General Manager, Aeronautical Product Certification)

Data da aprovação ANAC: 03 July 2017
(ANAC Approval Date:)

I.R.

Revisão:
(Rev.:)

Documento assinado eletronicamente por **MARIO IGAWA, Gerente-Geral de Certificação de Produtos Aeronáuticos**, em 04/07/2017, às 15:49, conforme horário oficial de Brasília, com fundamento no art. 6º, § 1º, do Decreto nº 8.539, de 8 de outubro de 2015.

A autenticidade deste documento pode ser conferida no site http://sistemas.anac.gov.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0, informando o código verificador **0822186** e o código CRC **C49D3B2B**.

Transport Canada Transports Canada

Department of Transport

Supplemental Type Certificate

This approval is issued to:

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada T2E 6R7

Number: SH09-38
Issue No.: 2
Approval Date: August 07, 2009
Issue Date: October 21, 2010

Responsible Office: Prairie and Northern

Aircraft/Engine Type or Model: EUROCOPTER AS 350 B, AS 350 B1, AS 350 B2, AS 350 B3, AS 350 BA, AS 350 D, AS 350 D1, EUROCOPTER FRANCE AS 355 E, AS 355 F, AS 355 F1, AS 355 F2, AS 355 N, AS 355 NP

Canadian Type Certificate or Equivalent: EUROCOPTER AS 350: H-83
EUROCOPTER FRANCE AS 355: H-87

Description of Type Design Change: Installation of Quick Release Maintenance Step; Installation of Maintenance Peg Step; Installation of Fixed Cabin Step

Installation/Operating Data, Required Equipment and Limitations:

Configuration A – Quick Release Maintenance Step:
Installation of the External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is required for installation of the Quick Release Maintenance Step. Installation of the Quick Release Maintenance Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-1, Revision 4, dated 29 June 2010, or later approved revision.

External Attachment Provisions may remain installed if the Step Installation is removed.

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS827.90, Revision 2, dated 24 June 2010, or later approved revision is required with this installation.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.91, Revision 3, dated 28 June 2010, or later accepted revision is required with this installation.

.....2/

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

D.S. Austen
For Minister of Transport

Canada

DESIGN APPROVAL DOCUMENT TRANSFER

Transfer of this design approval document requires the prior approval of the Minister and the reissue of this document in the name of the transferee.

The reissue of this design approval document in the name of the transferee will be contingent on the holder and the transferee fulfilling their responsibilities as described in section 521.357 of the *Canadian Aviation Regulations*.

TRANSFERT DU DOCUMENT D'APPROBATION DE LA CONCEPTION

L'approbation préalable du ministre est exigée en vue d'un transfert de ce document d'approbation de la conception et la réédition de ce document au nom du cessionnaire.

La réédition de ce document d'approbation de la conception au nom du cessionnaire est conditionnelle à la satisfaction des exigences et des responsabilités, du titulaire et du cessionnaire, décrites dans l'article 521.357 du *Règlement de l'aviation canadien.*

I have reviewed the above requirements and recognize that until the above requirements are met the certificate and all its privileges and obligations will not be transferred.

J'ai examiné les conditions susmentionnées et je comprends que le transfert du certificat et des privilèges et des obligations s'y rattachant ne sera pas effectué tant que ces conditions n'auront pas été respectées.

_____ _____

Signature of holder/signature du titulaire date/date

Superceded

Configuration B – Maintenance Peg Step:
Installation of the External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is a prerequisite for installation of the Maintenance Peg Step. Installation of the Maintenance Peg Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-2, Revision 3, dated 29 June 2010, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.93, Revision 2, dated 28 June 2010, or later accepted revision is required with this installation.

Configuration C – Fixed Cabin Step:
Installation of the Fixed Cabin Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-3, Revision 4, dated 29 June 2010, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.92, Revision 2, dated 28 June 2010, or later accepted revision is required with this installation.

Data Pertinent to All Configurations:
Any combination of Configurations A, B, or C may be simultaneously installed.

Basis of Certification:
Basis of certification remains as specified in the applicable Type Certificate Data Sheets for affected airworthiness standards.

– End –

Transport Canada Transports Canada

Department of Transport

Supplemental Type Certificate

This approval is issued to:

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada T2E 6R7

Number: SH09-38
Issue No.: 1
Approval Date: August 07, 2009
Issue Date: August 07, 2009

Responsible Office: Prairie and Northern

Aircraft/Engine Type or Model: EUROCOPTER AS 350 B, AS 350 B1, AS 350 B2, AS 350 B3, AS 350 BA, AS 350 D, AS 350 D1, EUROCOPTER FRANCE AS 355 E, AS 355 F, AS 355 F1, AS 355 F2, AS 355 N, AS 355 NP

Canadian Type Certificate or Equivalent: AS 350 Series: H-83
AS 355 Series: H-87

Description of Type Design Change: Installation of Quick Release Maintenance Step; Installation of Maintenance Peg Step; Installation of Fixed Cabin Step

Installation/Operating Data, Required Equipment and Limitations:

Configuration A – Quick Release Maintenance Step:
Installation of the External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is required for installation of the Quick Release Maintenance Step. Installation of the Quick Release Maintenance Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-1, Revision 2, dated 07 August 2009, or later approved revision.

External Attachment Provisions may remain installed if the Step Installation is removed.

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS827.90, Revision 0, dated 04 August 2009, or later approved revision is required with this installation.

.../2



Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

Greg Oucharek
For Minister of Transport

Canada

TRANSFER ENDORSEMENT

A transfer of ownership requires prior approval from the Minister.

The reissue of the certificate in the name of the transferee will be contingent upon a demonstration made by the new owner that he/she can fulfill the responsibilities of the holder as described in Airworthiness Manual Chapter 513.

TRANSFER OF OWNERSHIP

TO (NAME AND ADDRESS OF TRANSFEREE) _____

_____

_____

_____

FROM (NAME AND ADDRESS OF OWNER) _____

_____

_____

_____

TRANSFER PARTICULARS (LICENSE AGREEMENT, SALE OF RIGHTS, ETC.) _____

_____

_____

_____

DATE OF TRANSFER _____

_____

SIGNATURE (OF TRANSFERRING OWNER)

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.91, Revision 1, dated 23 July 2009, or later accepted revision is required with this installation.

Configuration B – Maintenance Peg Step:
Installation of the External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is a prerequisite for installation of the Maintenance Peg Step. Installation of the Maintenance Peg Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-2, Revision 1, dated 07 August 2009, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.93, Revision 0, dated 04 August 2009, or later accepted revision is required with this installation.

Configuration C – Fixed Cabin Step:
Installation of the Fixed Cabin Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-3, Revision 3, dated 28 July 2009, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.92, Revision 1, dated 23 July 2009, or later accepted revision is required with this installation.

Basis of Certification:
Basis of certification remains as specified in the applicable Type Certificate Data Sheets for affected airworthiness standards.

– End –

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82701	Quick Release Maintenance Step Installation (High)	0
82702	Quick Release Maintenance Step Installation (Low)	0
82703	Quick Release Maintenance Step Installation (Mid)	0
ICA827.91	Instructions for Continued Airworthiness	2
FMS827.90	Flight Manual Supplement	1
FABRICATION DOCUMENTS		
DCL827-11	Document Control List for Step Assembly	1
ENGINEERING DOCUMENTS		

Transport Canada

APPROVAL: E. BURGOIN
DAR 290M

APPROVED
By
Appr'l No. SK09-38
Appr'l Date 07 AUG 2009
Issue No. 1
Issue Date 07 AUG 2009

THIS DCL REVISION APPROVED
21 JAN 2010

ORIGINAL DATE:
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15 January 2010

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SHEET 1 OF 1

Eurocopter AS350 & AS355 Series Quick Release Maintenance Step Installation

DCL827-1

Rev. **3**

AS350 & AS355 SERIES HELICOPTERS

FLIGHT MANUAL SUPPLEMENT
for the
INSTALLATION of the AERO DESIGN QUICK RELEASE MAINTENANCE STEP

QUICK RELEASE MAINTENANCE STEP MODELS: 82701, 82702, 82708

Supplemental Type Certificate No. SH09-38

Sections I, II, III, IV, and V of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section II, Limitations, is mandatory. Section VI and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.



TRANSPORT CANADA APPROVED

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III	Emergency ProCedures	3
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Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	By
0	4 Aug 2009	None		
1	5 Jan 2010	1, 2, 4-8		

I GENERAL

No change.

II LIMITATIONS

No change.

III EMERGENCY PROCEDURES

No change.

IV NORMAL PROCEDURES

No change.

V PERFORMANCE

No change.

VI INSTALLATION / REMOVAL INSTRUCTIONS

The beams are installed in accordance with Supplemental Type Certificate SH08-16. The maintenance step is installed in accordance with drawing 82701, 82702, or 82708 as applicable. Removal of the step leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of step and which weight and balance amendment is in effect is required when step is installed or removed.

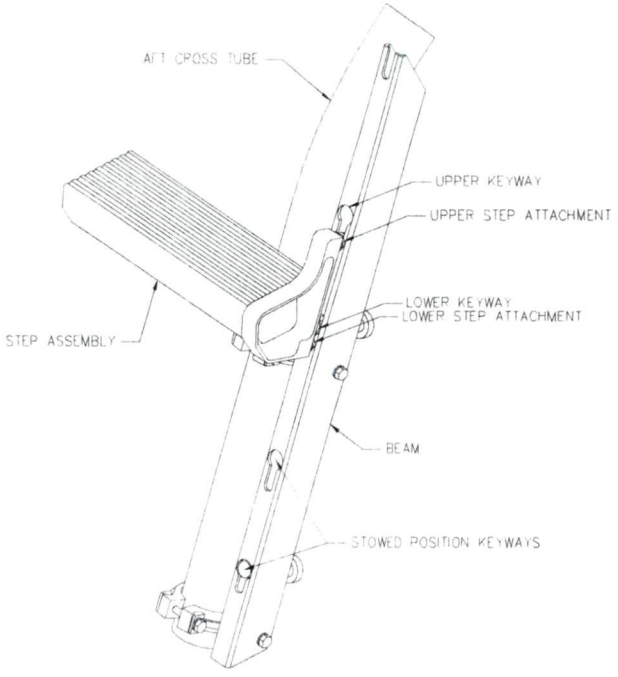


Figure 1 – Step Attachment Features

1. Installation - Refer to Figure 1.

   a) Set step upper attachment into upper keyway in forward and aft beams.

   b) Lift step until lower attachment fitting hits stop.

   c) Push fitting into keyway and slide step down until locked.

2. Removal - Refer to Figure 1.

   a) Pull knob at bottom end of forward beam and lift step until lower attachment fitting is free of keyway. Keep upper attachment in keyway on beam.

   b) Pull knob at bottom end of aft beam and lift step until lower attachment fitting is free of keyway. Keep upper attachment in keyway on beam.

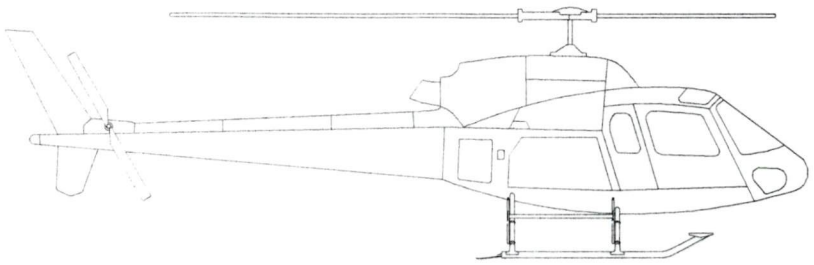
   c) Lift step until upper attachments are out of keyways on both beams and remove step from helicopter

VII WEIGHT AND BALANCE

This section contains weight and balance information for maintenance step models 82701, 82702, 82708. Refer to the weight and balance information applicable to model and configuration installed.

Weight and balance is for Maintenance Step only. Mounting beams are not included since they should have been included in the basic rotorcraft weight and balance at time of initial installation.

1. **MAINTENANCE STEP 82701**. The following weight and balance is for the quick release maintenance step installed in accordance with drawing 82701. Upper and lower (stowed) positions are provided, either position is approved for flight.



Maintenance Step: Configuration 82701-01 (High Mounting Provisions)

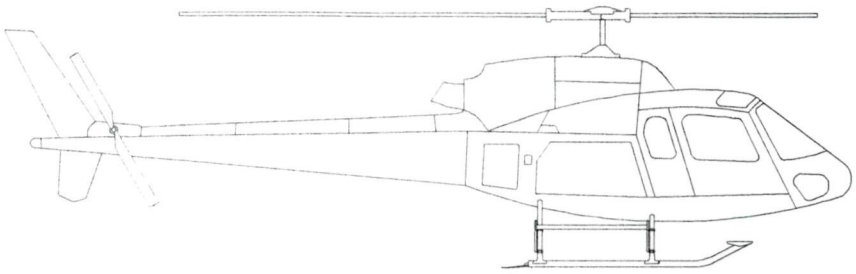
Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82710-01	Step (RH)	6.4	135.7	868.5	38.9	249.0
82710-01	Step (RH, stowed)	6.4	135.7	868.5	41.7	266.9
82710-01	Step (LH)	6.4	135.7	868.5	-38.9	-249.0
82710-01	Step (LH, stowed)	6.4	135.7	868.5	-41.7	-266.9

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
82710-01	Step (RH)	2.9	3446.8	9979.8	988.0	2865.2
82710-01	Step (RH, stowed)	2.9	3446.8	9979.8	1059.0	3071.1
82710-01	Step (LH)	2.9	3446.8	9979.8	-988.0	-2865.2
82710-01	Step (LH, stowed)	2.9	3446.8	9979.8	-1059.0	-3071.1

2. **MAINTENANCE STEP 82702**. The following weight and balance is for the maintenance step installed in accordance with drawing 82702.



Maintenance Step: Configuration 82702-01 (Low Mounting Provisions)

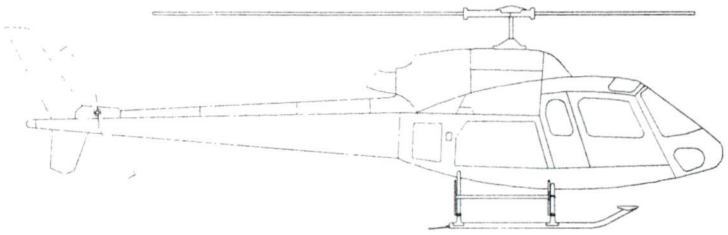
Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82710-01	Step (RH)	6.4	135.7	868.5	39.1	250.2
82710-01	Step (LH)	6.4	135.7	868.5	-39.1	-250.2

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
82710-01	Step (RH)	2.9	3446.8	9979.8	993.1	2880.1
82710-01	Step (LH)	2.9	3446.8	9979.8	-993.1	-2880.1

3. **MAINTENANCE STEP 82708**. The following weight and balance is for the maintenance step installed in accordance with drawing 82708.



Maintenance Step: Configuration 82708-01 (Mid Mounting Provisions)

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82710-01	Step (RH)	6.4	135.7	868.5	39.6	253.4
82710-01	Step (LH)	6.4	135.7	868.5	-39.6	-253.4

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
82710-01	Step (RH)	2.9	3446.8	9979.8	1005.8	2916.9
82710-01	Step (LH)	2.9	3446.8	9979.8	-1005.8	-2916.9

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 827.91

EUROCOPTER AS350 & AS355 SERIES

QUICK RELEASE MAINTENANCE STEP

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release Maintenance Step assembled in accordance with AERO Design Ltd. Document Control List DCL827-11, Revision 1, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 2
Date: 05 January, 2010

AERO Design Ltd.
Engineering Consultants

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
0			Original Issue
1	23 July 2009		
2	05 January 2010		

LIST OF EFFECTIVE PAGES

List of Revisions

Revision 0 (Original Issue)	20 October, 2008
Revision 1	23 July, 2009
Revision 2	05 January 2010

List of Effective Pages

Description	Pages	Revision No.
Cover	1	2
Revision Record/List of Effective Pages	2	2
Table of Contents	3	0
00-00-00	4-5	0
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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Maintenance Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Maintenance Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

High Mounted Quick Release Provisions:

The Quick Release Maintenance Step must be installed in the lower (stowed) position prior to installation of the AERO Design Ltd. Cargo Baskets in accordance with STC SH08-16.

0-5 GENERAL DESCRIPTION

The Quick Release Maintenance Step installation consists of a step assembly which is attached to quick release mounting provisions installed on the helicopter. These mounting provisions are capable of mounting various equipment including cargo baskets.

The step itself consists of an aluminum extrusion attached to brackets on the ends with fittings that lock into the quick release mechanism.

Two positions are provided: upper for use in maintenance activities and lower for stowing under a cargo basket.

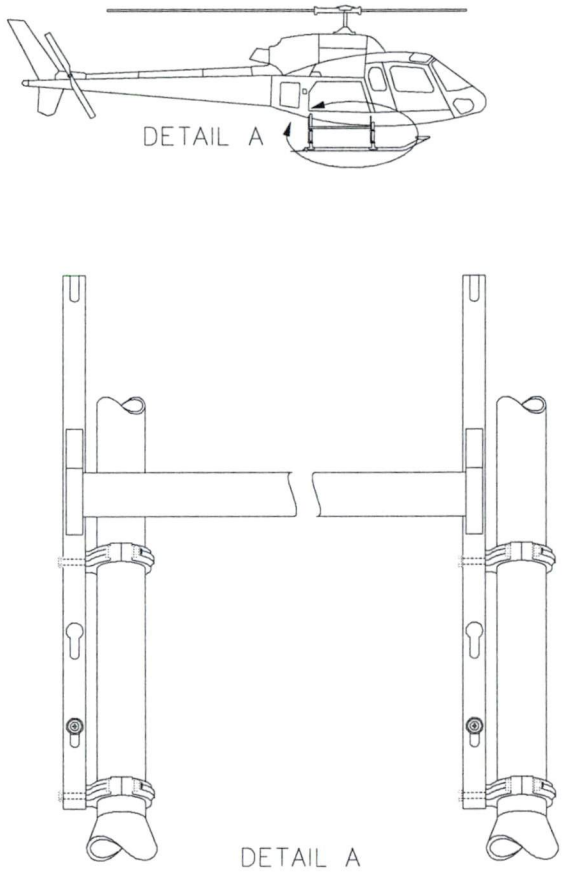


Figure 0-1 – AS350 Quick Release Maintenance Step Installation

(High Installation shown, Low Installation similar)

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Quick Release Maintenance Step.

CHAPTER 5 – INSPECTION REQUIREMENTS

Refer to ICA764.90 for inspection requirements for the Quick Release Mounting Provisions not included below.

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Quick Release Maintenance Step.

Daily Inspection

1. Inspection Area: Step
   a) Inspect the step attachment to the beams for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.

100 Hour or Annual Inspection

Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for inspection of mounting provisions.

1. Inspection Area: Step
   a) Visually inspect welds attaching end brackets to step extrusion for cracks, corrosion or other damage.
   b) Visually inspect step for damage.
   c) Visually inspect lugs attaching the step to the beams for security and damage.

Special Inspections

1. Following a hard landing inspect the Quick Release Maintenance Step installation in accordance with the 100 hour or annual inspection listed above.
2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for further limits and repair instructions.

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Step Assembly

Part	Type of Damage	Max. Allowable	Repair
Step End Bracket	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Centre Step Section	Corrosion	2" x 2" x 0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long	Blend up to 0.010" deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" max at middle of step	None

2. Steel Beams

Part	Type of Damage	Max. Allowable	Repair
Steel Beam	Corrosion	0.030" deep	Blend up to 0.030" deep with scotchbrite.
	Scratches / Nicks (Outboard face)	0.030" deep x 0.125" wide	Blend up to 0.030" deep with scotchbrite.
	Scratches / Nicks (all other sides)	0.060" deep x 0.125" wide	Blend up to 0.060" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Elongation of Keyway	See figure 5-1 thru 5-3	None
	Widening of slots	27/64" (0.422) diameter maximum (check with a 27/64" drill)	None

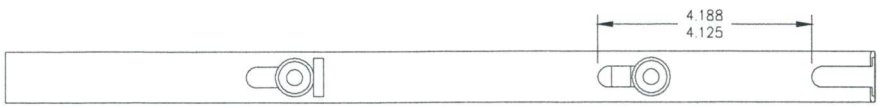


Figure 5-1 – Critical Keyway dimensions (Low Beams)

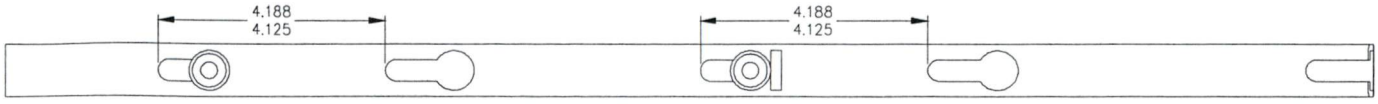


Figure 5-2 – Critical Keyway dimensions (High Beams)

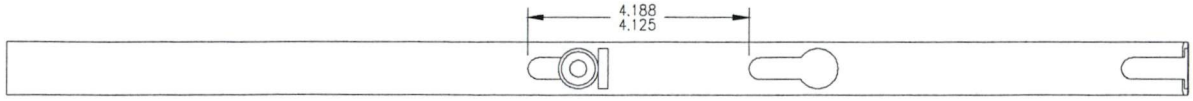


Figure 5-3 – Critical Keyway dimensions (Mid Beams)

3. Step Welds

Cracks up to 0.25" long may be repaired as follows:

a) Clean area of paint.

b) Grind away weld in area of crack.

c) T.I.G. weld per MIL-STD-2219 Class "C" using ER4043 filler rod. Do not grind flush.

d) Touch up paint as noted in section 5-3.

4. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

¼-28 insert: 3591-4CN375

3/8-24 insert: 3591-6CN563

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint. The tread area is painted with anti-skid paint. If the anti-skid paint is damaged, touch up with Randolph X1567 Wingwalk grip paint or equivalent.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Quick Release Maintenance Step Installation may be applied to the right and/or left side of the helicopter. Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for installation, inspection, repair and removal instructions for the mounting provisions.

25-1 STEP INSTALLATION

Refer to Figure 4.

1. Set upper attachment into upper keyway in forward and aft beams.
2. Lift step until lower attachment fitting hits stop. Push fitting into keyway and slide step down until locked.

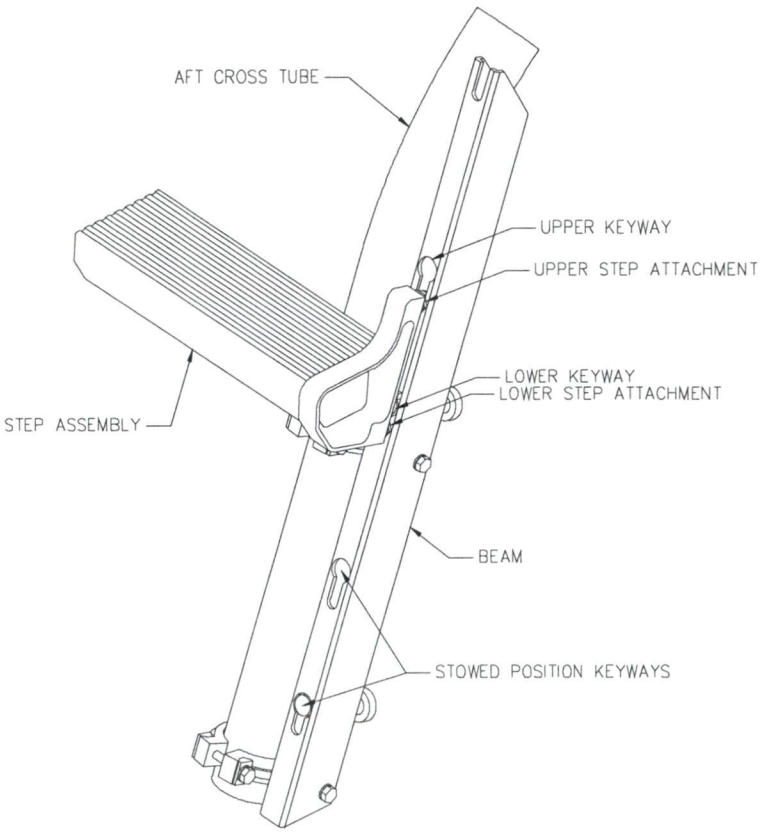


Figure 25-1 – Step Attachment
(High Installation shown, Low and Mid Installation similar)

25-2 STEP REMOVAL

Refer to Figure 4.

1. Pull knob at bottom end of forward beam and lift step until lower attachment fitting is free of keyway. Keep upper attachment in keyway on beam.
2. Pull knob at bottom end of aft beam and lift step until lower attachment fitting is free of keyway. Keep upper attachment in keyway on beam.

3. Lift step until upper attachments are out of keyways on both beams and remove from helicopter.

25-3 WEIGHT AND BALANCE

Difference weight and balance configurations are required for the pilot. The first is the installation of Provisions only. The second is Provisions and Step in the upper position. The third is Provisions and step in the lower position (High Configuration only).

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
	Upper Position (High config.)	lb	in	in-lb	in	in-lb
78601-02	High Provisions Installation	10.0	135.5	1354.9	36.8	368.3
82710-01	Quick Release Maintenance Step	6.4	135.7	868.5	38.9	249.0
82701-01	**Step Installation**	**16.4**	**135.6**	**2223.4**	**37.6**	**617.3**
	Lower Position (Stowed, High config.)					
78601-02	High Provisions Installation	10.0	135.5	1354.9	36.8	368.3
82710-01	Quick Release Maintenance Step	6.4	135.7	868.5	41.7	266.9
82701-01	**Step Installation**	**16.4**	**135.6**	**2223.4**	**38.7**	**635.2**
	Low Configuration					
78601-01	Low Provisions Installation	7.0	135.4	947.9	37.6	263.5
82710-01	Quick Release Maintenance Step	6.4	135.7	868.5	39.1	250.2
82702-01	**Step Installation**	**13.4**	**135.6**	**1816.4**	**38.3**	**513.7**
	Mid Configuration					
78601-03	Mid Provisions Installation	8.0	135.4	1083.9	37.3	298.2
82710-01	Quick Release Maintenance Step	6.4	135.7	868.5	39.6	253.4
82708-01	**Step Installation**	**14.4**	**135.6**	**1952.4**	**38.3**	**551.6**

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
	Upper Position (High config.)	kg	mm	mm-kg	mm	mm-kg
78601-02	High Provisions Installation	4.5	3441.3	15485.9	935.5	4209.8
82710-01	Quick Release Maintenance Step	2.9	3446.8	9979.8	988.0	2865.2
82701-01	**Step Installation**	**7.4**	**3441.3**	**25465.7**	**956.1**	**7075.0**
	Lower Position (Stowed, High config.)					
78601-02	High Provisions Installation	4.5	3441.3	15485.9	935.5	4209.8
82710-01	Quick Release Maintenance Step	2.9	3446.8	9979.8	1059.0	3071.1
82701-01	**Step Installation**	**7.4**	**3441.3**	**25465.7**	**983.9**	**7280.9**
	Low Configuration					
78601-01	Low Provisions Installation	3.2	3439.6	11006.7	955.0	3056.1
82710-01	Quick Release Maintenance Step	2.9	3446.8	9979.8	993.1	2880.1
82702-01	**Step Installation**	**6.1**	**3440.4**	**20986.5**	**973.1**	**5936.2**
	Mid Configuration					
78601-03	Mid Provisions Installation	3.6	3441.4	12457.7	946.9	3427.7
82710-01	Quick Release Maintenance Step	2.9	3446.8	9979.8	1005.8	2916.9
82708-01	**Step Installation**	**6.5**	**3444.1**	**22437.5**	**976.1**	**6344.6**

Note: Lateral arms are given for right side installation. For installation on left side, lateral arms are negative.

25-4 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual for torque values not listed in this ICA.

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82703	Maintenance Peg Step Installation	0
82707	Maintenance Peg Step Installation (Stand Alone)	0
ICA827.93	Instructions for Continued Airworthiness	1
FABRICATION DOCUMENTS		
82735	Step Assembly	0
82740	Step Assembly	0
ENGINEERING DOCUMENTS		
ER827.01	Engineering Report	2

APPROVAL:

Transport Canada
E. BURGOIN
DAR 200M
APPROVED
By
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Appr'l Date 07 AUG 2009
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SHEET 1 OF 1

Eurocopter AS350 & AS355 Series Maintenance Peg Step Installation

DCL827-2

Rev. **2**

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 827.93

EUROCOPTER AS350 & AS355 SERIES

MAINTENANCE PEG STEP

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Maintenance Peg Step assembled in accordance with AERO Design Ltd. Document Control List DCL827-2, Revision 2, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 1
Date: 17 December 2009

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Engineering Consultants

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
0	4 August 2009		Original Issue
1	17 December 2009		

LIST OF EFFECTIVE PAGES

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Revision 0 (Original Issue)	4 August 2009
Revision 1	17 December 2009

List of Effective Pages

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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Maintenance Peg Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Maintenance Peg Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
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Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

The Maintenance Peg Step (82703-01/-02) requires installation of the High Mounted Attachment Provisions in accordance with STC SH08-16.

The Maintenance Peg Step (82707-01/-02) is not compatible with High Mounted Attachment Provisions in accordance with STC SH08-16.

0-5 GENERAL DESCRIPTION (82703 CONFIGURATION)

The Maintenance Peg Step (82703-01/-02) installation consists of a tube that sticks out inboard and aft from the High Mounted External Attachment Provision. The Maintenance Peg Step is required because installation of the High Mounted External Attachment Provision requires the existing step provided by Eurocopter to be removed, if installed.

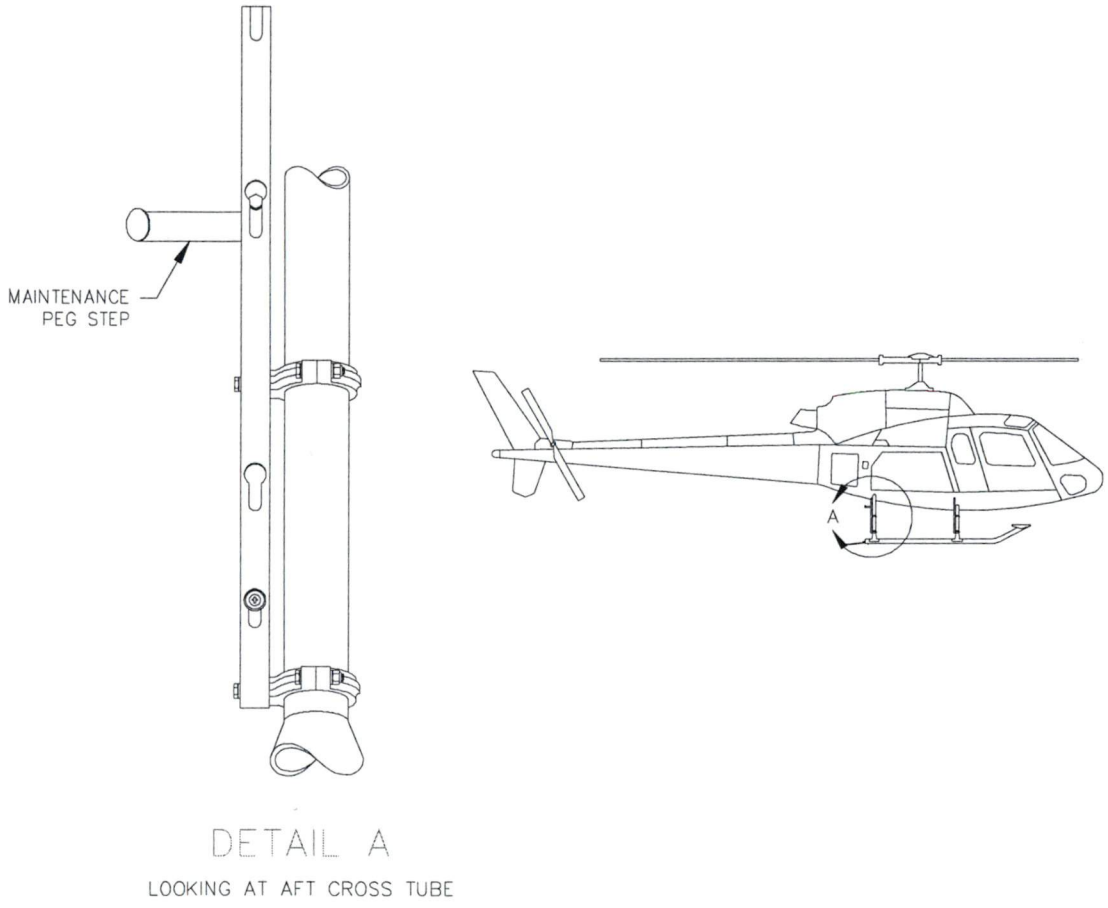


Figure 0-1 – Maintenance Peg Step Installation

0-6 GENERAL DESCRIPTION (82707 CONFIGURATION)

The Stand Alone Maintenance Peg Step installation (82707-01/-02) consists of a fitting attached to the aft cross tube with a tube that sticks out inboard and aft from the cross tube. The Maintenance Peg Step is required to aid access to the helicopter for maintenance activities.

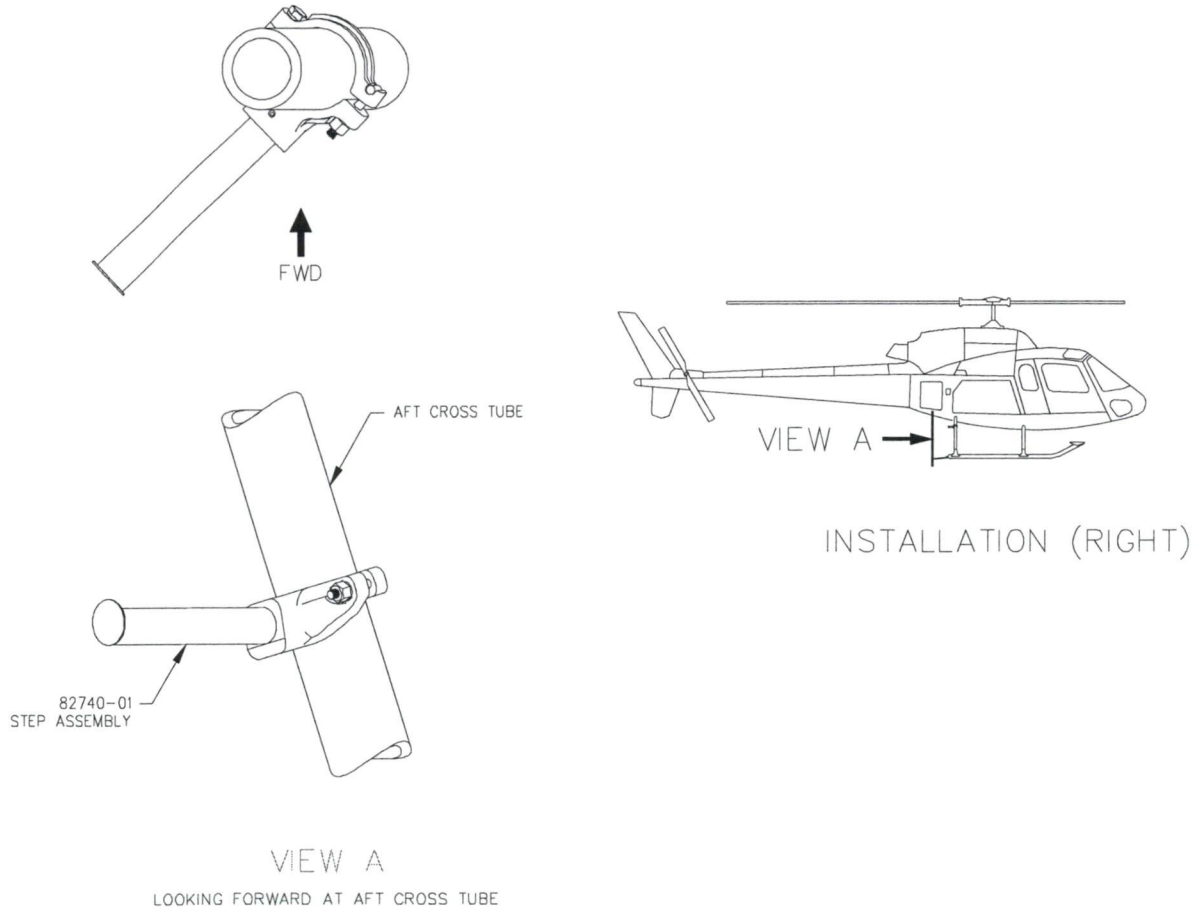


Figure 0-2 – Maintenance Peg Step Installation

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Maintenance Peg Step.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Maintenance Peg Step.

Daily Inspection

1. Inspection Area: Step
   a) Inspect the Step for condition and security.

100 Hour or Annual Inspection

1. Inspection Area: Step
   a) Visually inspect all mounting hardware for condition and security.
   b) Visually inspect step for cracks, corrosion or other damage.
   c) 82707 Configuration Only: Visually inspect step tube attachment to socket fitting. Step tube must not be loose in socket.

Special Inspections

1. Following a hard landing inspect the Maintenance Peg Step installation in accordance with the 100 hour or annual inspection listed above.

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Maintenance Peg Step (82703 Configuration)

Part	Type of Damage	Max. Allowable	Repair
Step	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks	None	N/A
	Bent Lugs	None	N/A

2. Maintenance Peg Step (82707 Configuration)

Part	Type of Damage	Max. Allowable	Repair
Step Tube	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks	None	N/A
	Permanent bend	*Note	None
Fitting	Corrosion	0.030" deep	Blend up to 0.030" deep with scotchbrite.
	Scratches / Nicks	0.060" deep x 0.5" long	Blend up to 0.060" deep with scotchbrite.
	Cracks	None	N/A
	Elongation of socket hole	None	N/A

*Note: Minor bending of the step tube that does not cause the tube to become loose in the socket is acceptable.

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly (82703 and 82707 configurations)

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint. The tread area is painted with anti-skid paint. If the anti-skid paint is damaged, touch up with Randolph X1567 Wingwalk grip paint or equivalent.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Maintenance Peg Step Installation may be applied to the right and/or left side of the helicopter. The 82707 configuration cannot be installed on the same side as the 82703 configuration

25-1 STEP INSTALLATION (82703 CONFIGURATION)

Refer to Figure 2. Beam does not have to be installed on helicopter prior to this installation.

1. Locate Step Assembly 78635-01 / -02 (right/left) on aft Beam 78631-01 by inserting bushings on Step Assembly into holes provided on inboard face of aft Beam. Fasten with two AN4-5A Bolts, AN960-416 Washers, and MS21044N4 Nuts. Torque bolts to 30-40 in-lbs.

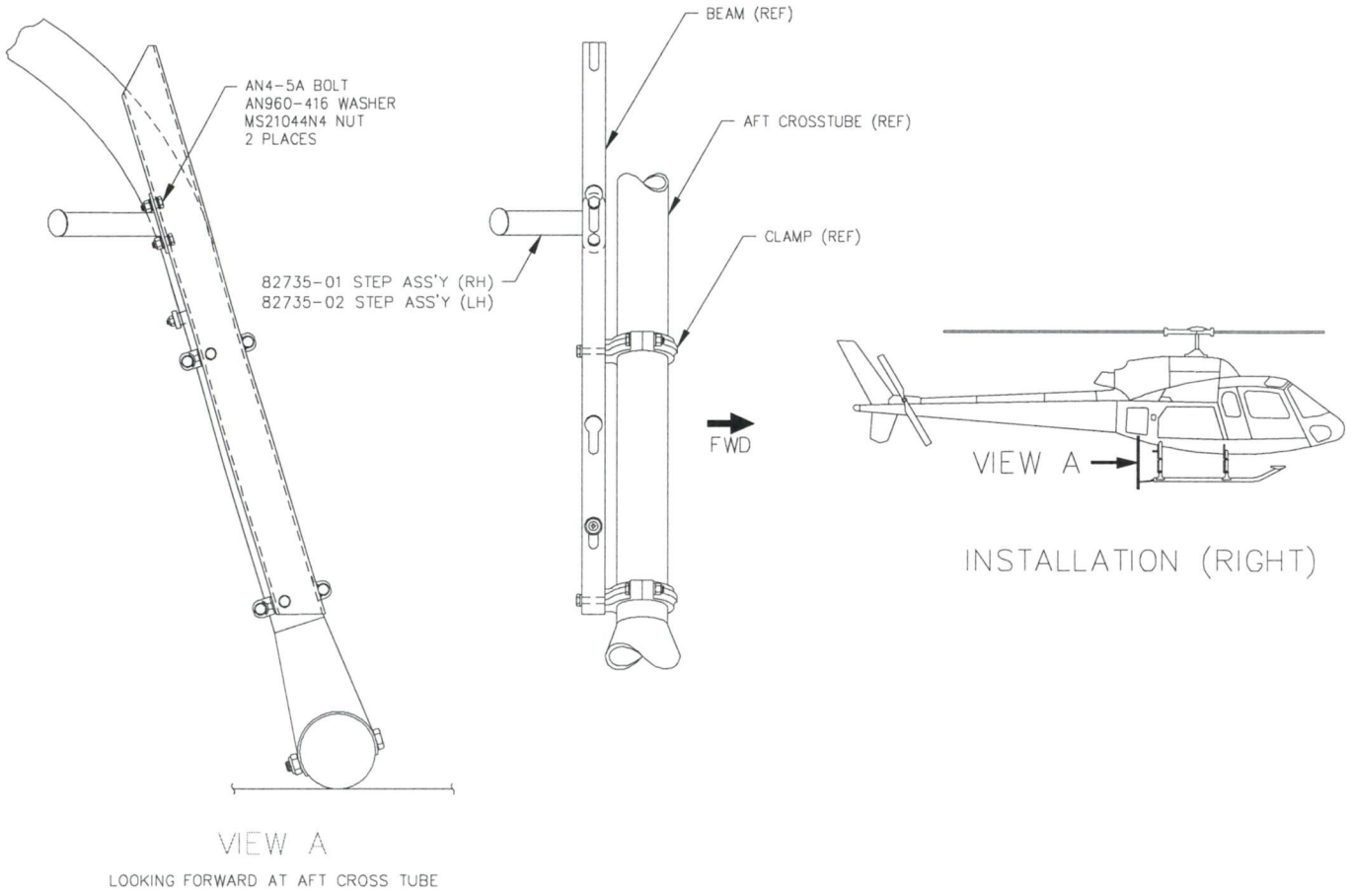


Figure 2 – Maintenance Peg Step Attachment Details

25-2 STEP REMOVAL (82703 CONFIGURATION)

Refer to Figure 2.

1. Remove two AN4-5A Bolts, AN960-416 Washers, and MS21044N4 Nuts attaching Step Assembly to aft Beam. Remove Step Assembly.

25-3 STEP INSTALLATION (82707 CONFIGURATION)

1. Locate Step Assembly 78640-01 on aft cross tube. Fasten with one side with AN4-14A Bolt, AN960-416 Washers, and MS21044N4 Nut; fasten opposite side with FT4F-175H T-Bolt, AN960-416 Washer and MS21044N4 Nut. Rotate step until horizontal, approximately 45 degrees to the cross tube. Torque nuts to 50-70 in-lbs.

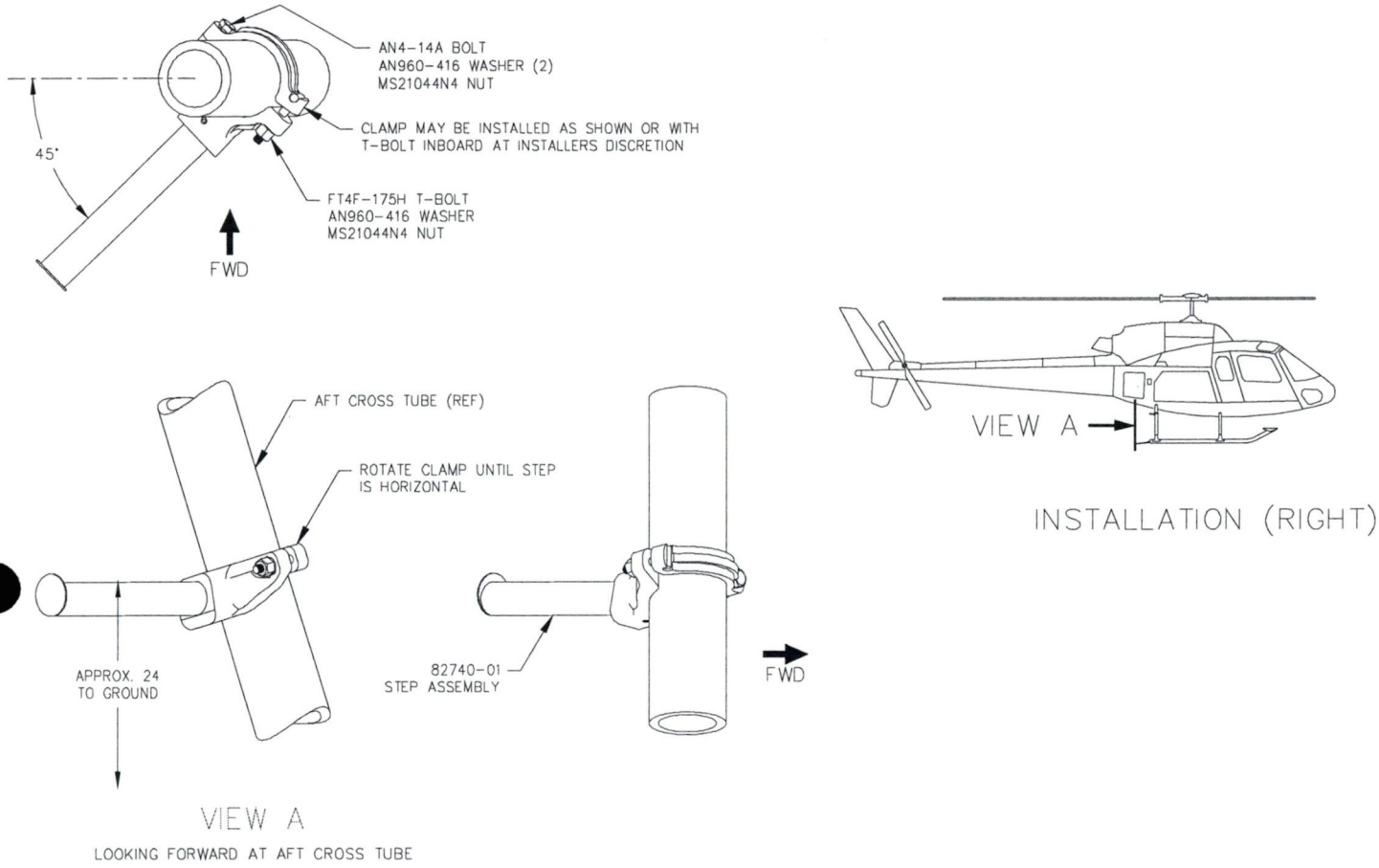


Figure 2 – Maintenance Peg Step Attachment Details

25-4 STEP REMOVAL (82707 CONFIGURATION)

Refer to Figure 2.

1. Remove AN4-14A Bolt, FT4F-175H T-Bolt, AN960-416 Washers, and MS21044N4 Nuts attaching Step Assembly to aft cross tube. Remove Step Assembly.

25-5 WEIGHT AND BALANCE

82703 Configuration

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82703-01	Maintenance Peg Step Inst'n (Right)	0.4	165.3	66.1	33.9	13.6
82703-02	Maintenance Peg Step Inst'n (Left)	0.4	165.3	66.1	-33.9	-13.6

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	Moment
		kg	mm	mm-kg	mm	mm-kg
82703-01	Maintenance Peg Step Inst'n (Right)	0.2	4199	763	861	157
82703-02	Maintenance Peg Step Inst'n (Left)	0.2	4199	763	-861	-157

82707 Configuration

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82707-01	Maintenance Peg Step Inst'n (Right)	1.0	163.8	163.8	32.5	32.5
82707-02	Maintenance Peg Step Inst'n (Left)	1.0	163.8	163.8	-32.5	-32.5

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	Moment
		kg	mm	mm-kg	mm	mm-kg
82707-01	Maintenance Peg Step Inst'n (Right)	0.45	4160.5	1872.2	825.5	371.5
82707-02	Maintenance Peg Step Inst'n (Left)	0.45	4160.5	1872.2	-825.5	-371.5

25-6 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual for torque values not listed in this ICA.

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82705	Long Cabin Step Installation	0
82706	Short Cabin Step Installation	0
ICA827.92	Instructions for Continued Airworthiness	1
FABRICATION DOCUMENTS		
DCL827-13	Document Control List for Step Assembly	2
ENGINEERING DOCUMENTS		

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SHEET 1 OF 1

Eurocopter AS350 & AS355 Series
Fixed Cabin Step Installation

DCL827-3

Rev.

3

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 827.92

EUROCOPTER AS350 & AS355 SERIES

FIXED CABIN STEPS

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Fixed Cabin Step assembled in accordance with AERO Design Ltd. Document Control List DCL827-13, Revision 2, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 1
Date: 23 July 2009

AERO Design Ltd.
Engineering Consultants

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RECORD OF REVISIONS

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1	23 July 2009		

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05-00-00	7-8	1
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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Fixed Cabin Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Fixed Cabin Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

The Long Fixed Cabin Step (82705-01/-02) is NOT compatible with the AERO Design Ltd. Long Cargo Basket in the High Mounted or Low Mounted configuration installed in accordance with STC SH08-16 (drawing 78401).

The Short Fixed Cabin Step (82706-01/-02) is compatible with all AERO Design Ltd. Cargo Baskets, in both High Mounted and Low Mounted configurations installed in accordance with STC SH08-16.

0-5 GENERAL DESCRIPTION

The Fixed Cabin Step installation consists of a step assembly which is attached to the forward end of the skid tube, running aft to the cross tube (long configuration) or a bracket (short configuration). The two configurations are provided to accommodate AERO Design Ltd. Quick Release Cargo Baskets.

The step itself consists of an aluminum extrusion attached to an adjustable bracket on the aft end, and a sheet metal assembly that attaches to the forward end of the skid tube.

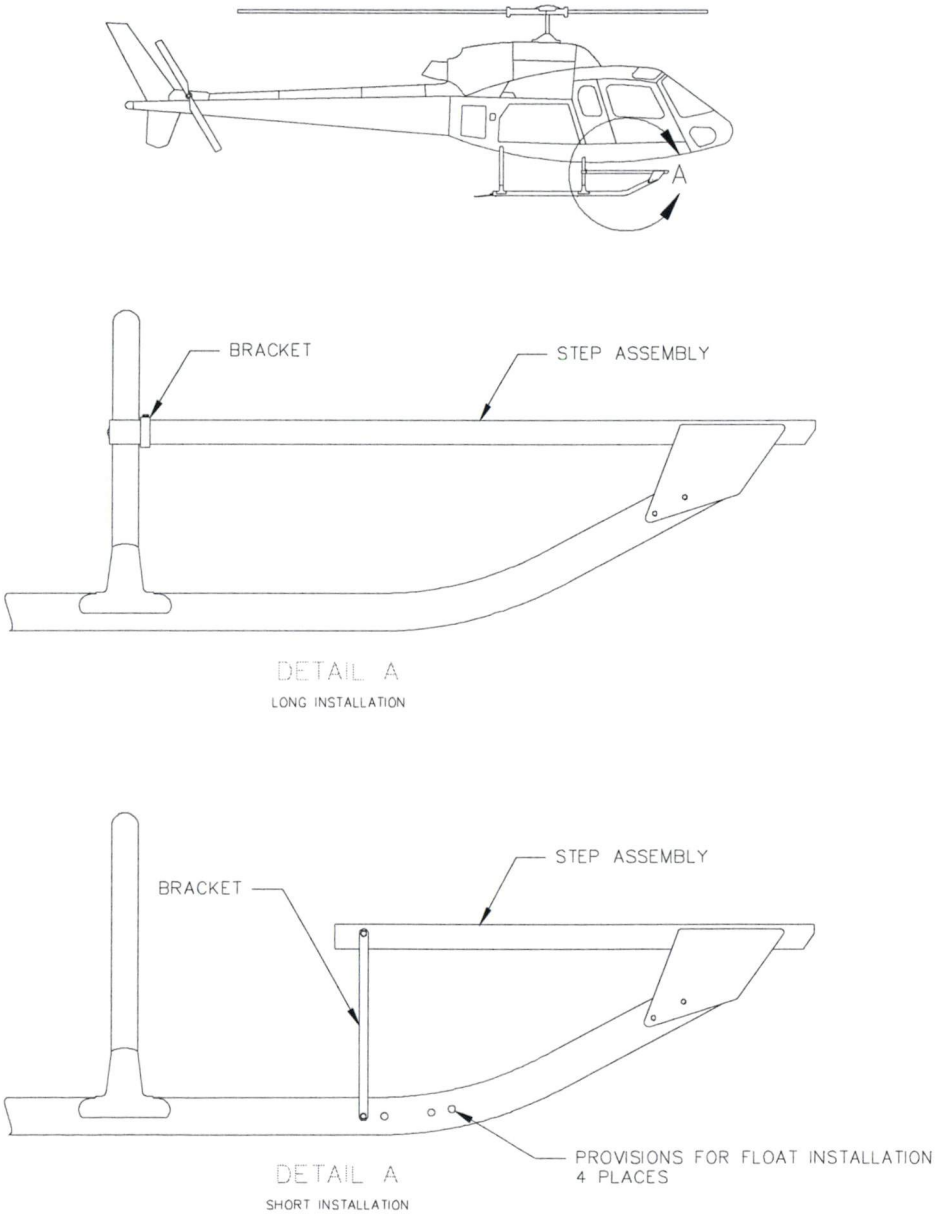


Figure 1 – AS350 Fixed Cabin Step Installation

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Fixed Cabin Step.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Fixed Cabin Step.

Daily Inspection

1. Inspection Area: Step
   a) Long step only: Inspect the clamp attaching the aft bracket to the forward cross tube for condition and security.
   b) Long step only: Inspect the aft step attachment bracket to the forward cross-tube for condition and security.
   c) Short step only: Inspect bracket attaching aft end of step to skid tube for condition and security.
   d) Inspect the forward step attachment sheet metal bracket for condition and security.

100 Hour or Annual Inspection

1. Inspection Area: Step
   a) Visually inspect all mounting hardware for condition and security.
   b) Visually inspect step, mounting brackets, and clamp for condition and security.
   c) Long step only: Check step for slippage at the clamp on the forward cross tube. Step should be parallel to the ground (+/- 0.25").

Special Inspections

1. Following a hard landing inspect the Fixed Cabin Step installation in accordance with the 100 hour or annual inspection listed above.
2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Step Assembly

Part	Type of Damage	Max. Allowable	Repair
Brackets, Clamp	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Step Section	Corrosion	2" x 2" x 0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long	Blend up to 0.010" deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" max at middle of step	None

2. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

¼-28 insert: 3591-4CN375

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint. The tread area is painted with anti-skid paint. If the anti-skid paint is damaged, touch up with Randolph X1567 Wingwalk grip paint or equivalent.

2. Brackets / Clamps

The brackets and clamps are supplied painted white. If the paint is damaged, touch up with white polyurethane paint.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Fixed Cabin Step Installation may be applied to the right and/or left side of the helicopter.

25-1 LONG STEP INSTALLATION

Refer to Figure 2 and 3.

1. Attach clamp 78620-01 to aft bracket 82721-01 (right) or 82721-02 (left) with AN4-5A Bolt and AN960-516 Washer. Torque bolt to 30-40 in-lbs. Slide bracket with clamp onto aft end of step.
2. Locate forward end of step assembly on skid tube. Install AN3-36A Bolt, AN960-10 Washers, and MS21044N3 Nut into existing holes in forward end of skid tube.

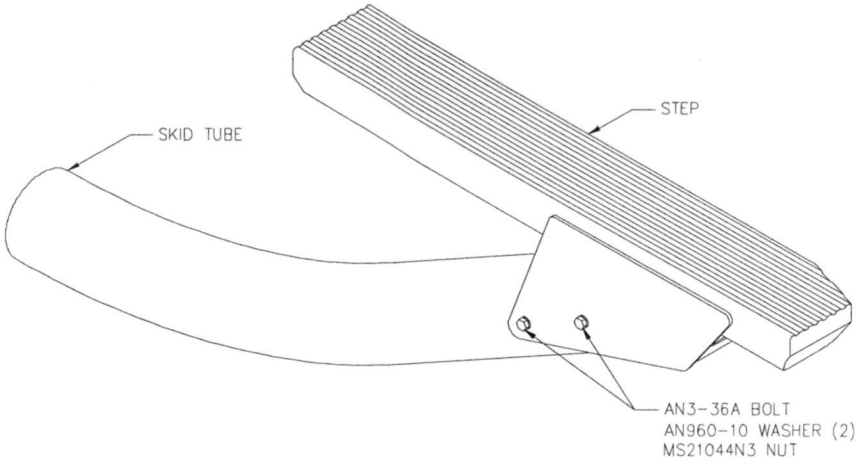


Figure 2 – Forward Step Attachment

3. Slide aft bracket along step until clamp can be attached to forward cross-tube. Bracket can be opened with a flat head screwdriver if necessary.

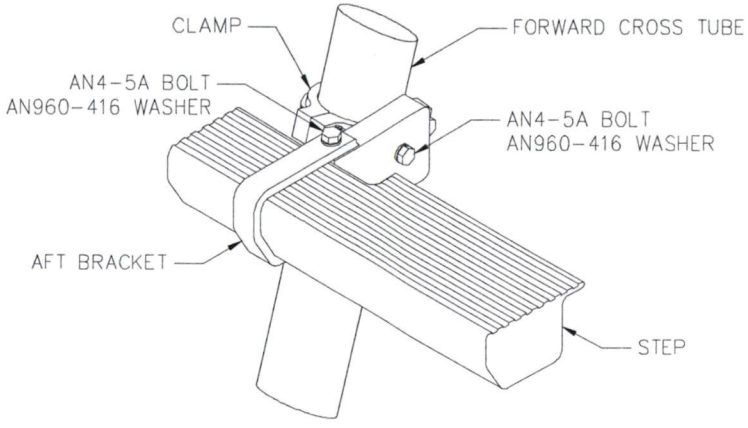


Figure 3 – Long Step Aft Attachment

4. Tighten clamp brackets to prevent the clamp from slipping on the cross tube.
5. Level the step parallel to the ground (+/- 0.25"). Nominal height is 17.5".
6. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

25-2 LONG STEP REMOVAL

Refer to Figure 2 and 3.

1. Remove AN3-36A Bolts, AN960-10 Washers, and MS21044N3 Nuts attaching forward end of step to skid tube.
2. If Clamp will remain installed:

   Remove AN4-5A Bolt and AN960-416 Washer securing Aft Bracket to Clamp. Remove Step.

   If Clamp will be removed:

   Remove AN4 Bolts and hardware securing clamp to cross tube. Remove Step.

25-3 SHORT STEP INSTALLATION

Refer to Figure 2 and 4.

1. Remove existing bolt, nut, and cups from last float provision hole at forward end of skid tube.
2. Insert Bushing 82732-02 into hole in skid tube. Set Bracket 82732-01 over bushing, straight edge outboard. Insert AN4-42A bolt with AN960-616 washer through bracket and bushing. Install AN960-416 washer and MS21044N4 nut on bolt. Do not tighten nut.
3. Set step assembly 82714-01 (right) or 82714-02 (left) on bracket. Install AN4-36A Bolt, AN960-416 Washers, and MS21044N4 Nut through bushing in step. Do not tighten nut.
4. At the forward end of the step, install AN3-36A Bolt, AN960-10 Washers, and MS21044N3 Nut through existing holes in forward end of skid tube.
5. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

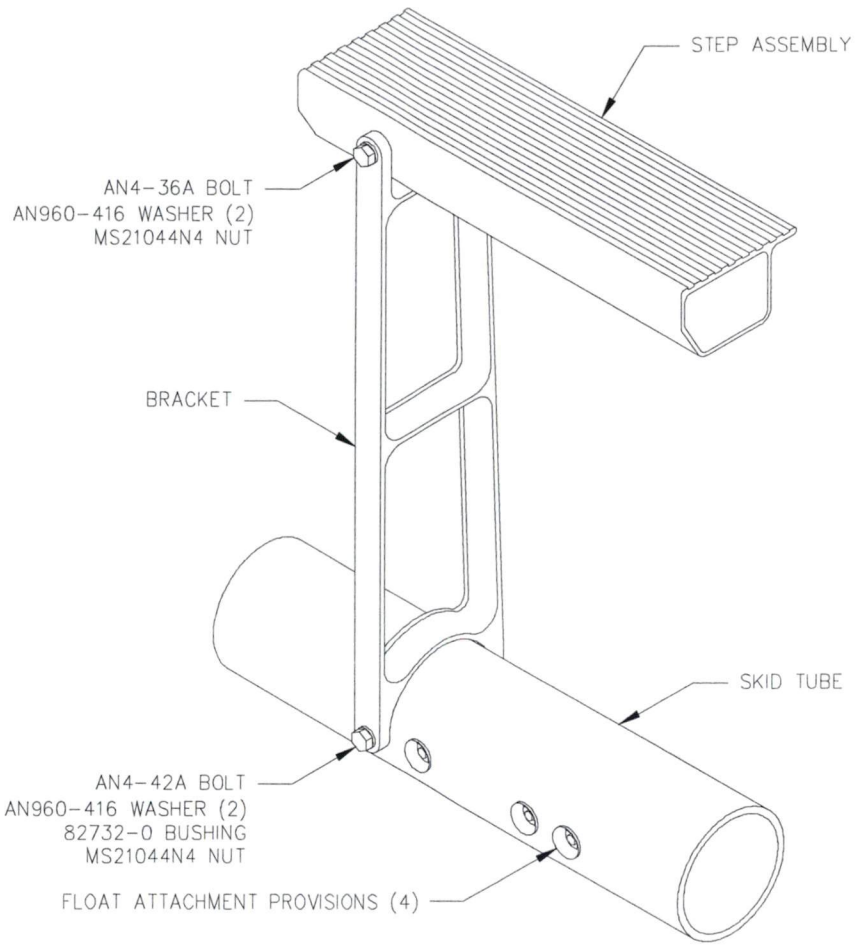


Figure 4 – Short Step Aft Attachment

25-4 SHORT STEP REMOVAL

Refer to figure 2 and 4.

1. Remove AN3-36A Bolts, AN960-10 Washers, and MS21044N3 Nuts attaching forward end of step to skid tube.
2. Remove AN4-36A Bolt, AN960-416 Washers, and MS21044N4 Nut attaching step to bracket. Remove step.
3. Remove AN4-41A Bolt, AN960-416 Washers, and MS21044N4 Nut attaching bracket to skid tube. Remove bracket and bushing from skid tube.
4. Install 22201TK050-072X Screw, 350A41-1095-20 Cup (2), 23119TK050X Washer, and ASN52320BH050N Nut in hole in skid tube. Refer to Illustrated Parts book and Maintenance Manual.

25-5 WEIGHT AND BALANCE

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82705-01	Long Fixed Cabin Step Installation	8.0	76.2	609.6	41.6	332.8
82706-01	Short Fixed Cabin Step Installation	6.6	69.1	456.1	39.4	260.0

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
82705-01	Long Fixed Cabin Step Installation	3.6	1935	6968	1057	3804
82705-01	Short Fixed Cabin Step Installation	3.0	1755	5265	1000	3000

Note: Lateral arms are given for right side installation. For installation on left side, lateral arms are negative.

25-6 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual for torque values not listed in this ICA.

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82710	Step Assembly	0
82720	Step End Fabrication	0
ENGINEERING DOCUMENTS		
ER827.01	Engineering Report	1

APPROVAL:

Transport Canada
E. BURGOIN
DAR 250M
APPROVED.
By
Appl No. SH09-38
Appl Date 7 AUG 2009
Issue No. 1
Issue Date 7 AUG 2009

ORIGINAL DATE:
31 October, 2008
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28 July, 2009

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SHEET 1 OF 1

Eurocopter AS350 & 355 Series Quick Release Maintenance Step Fabrication

DCL827-11

Rev. **1**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82713	Long Cabin Step Assembly	0
82714	Short Cabin Step Assembly	0
82721	Bracket Fabrication	1
82731	Cabin Step Parts Fabrication	0
82732	Short Cabin Step Parts Fabrication	0
ENGINEERING DOCUMENTS		
ER827.01	Engineering Report	1

APPROVAL:

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DAR 290M
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SHEET 1 OF 1

Eurocopter AS350 & 355 Series Fixed Cabin Step Fabrication

DCL827-13

Rev. **2**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82701	Quick Release Maintenance Step Installation	1
ICA827.91	Instructions for Continued Airworthiness	3
FMS827.90	Flight Manual Supplement	2
FABRICATION DOCUMENTS		
DCL827-11	Document Control List for Step Assembly	2

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
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Appr'l No. SH09-38
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SHEET 1 OF 1

Eurocopter AS350 & AS355 Series Quick Release Maintenance Step Installation

DCL827-1

Rev. **4**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82705	Long Cabin Step Installation	1
82706	Short Cabin Step Installation	1
82709	Full Length Cabin Step Installation	0
82750	Short Commuter Cabin Step Installation	0
82751	Long Commuter Cabin Step Installation	0
82752	Full Length Commuter Cabin Step Installation	0
82770	Short Cabin Step Installation – DART Conversion	0
82771	Long Cabin Step Installation – DART Conversion	0
ICA827.92	Instructions for Continued Airworthiness	2
FABRICATION DOCUMENTS		
DCL827-13	Document Control List for Step Assembly	4

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E. BURGOIN
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By
Appr'l No. SH09-38
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Issue No. 3
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DATED 21 JAN 2011

ORIGINAL DATE:
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REVISION DATE:
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SHEET 1 OF 1

Eurocopter AS350 & AS355 Series Fixed Cabin Step Installation

DCL827-3

Rev. **5**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82716	Step Assembly	0
82722	Step End Fabrication	0
ENGINEERING DOCUMENTS		
ER827.02	Engineering Report	0

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Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
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By D. S. Austen
Appr'l No. SH09-38
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SHEET 1 OF 1

Eurocopter AS350 & 355 Series Quick Release Maintenance Step Fabrication

DCL827-11

Rev. **2**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82715	Short Cabin Step Assembly	0
82717	Long Cabin Step Assembly	0
82718	Commuter Cabin Step Assembly	0
82723	Bracket Fabrication	0
82733	Short Cabin Step Parts Fabrication	0
82734	Cabin Step Parts Fabrication	0
82736	Commuter Cabin Step Parts Fabrication	0
82760	Commuter Step Assembly	0
82765	Bracket Fabrication	1
82780	Bracket	0
82781	Cap	0
82782	Bracket	0
82783	Cap	0
ENGINEERING DOCUMENTS		
ER827.02	Engineering Report	0
ER827.03	Engineering Report	0

APPROVAL:

Transport Canada
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SHEET 1 OF 1

Eurocopter AS350 & 355 Series Fixed Cabin Step Fabrication

DCL827-13

Rev. **4**

AS350 & AS355 SERIES HELICOPTERS

FLIGHT MANUAL SUPPLEMENT
for the
INSTALLATION of the AERO DESIGN QUICK RELEASE MAINTENANCE STEP

TCCA Supplemental Type Certificate No. SH09-38
FAA Supplemental Type Certificate No. SR02770NY

Sections I, II, III, IV, and V of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section II, Limitations, is mandatory. Section VI and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.



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VII	Weight and Balance	6

Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	By
0	4 Aug 2009	None		
1	5 Jan 2010	1, 2, 4-8		
2	16 June 2010	1, 2, 4-7		

I GENERAL

No change.

II LIMITATIONS

No change.

III EMERGENCY PROCEDURES

No change.

IV NORMAL PROCEDURES

No change.

V PERFORMANCE

No change.

OCT 2 1 2010
TRANSPORT CANADA APPROVED

VI INSTALLATION / REMOVAL INSTRUCTIONS

The attachment provisions are installed in accordance with Supplemental Type Certificate SH08-16. The maintenance step is installed in accordance with drawing 82701.

There are three configurations approved for flight:
1) Step in the upper (normal) position or lower (stowed) position.
2) Step in the lower (stowed) position with a cargo basket installed.
3) Step removed, leaving the attachment provisions in place.

Logbook entry indicating installation or removal of step and which weight and balance amendment is in effect is required when step is installed or removed.

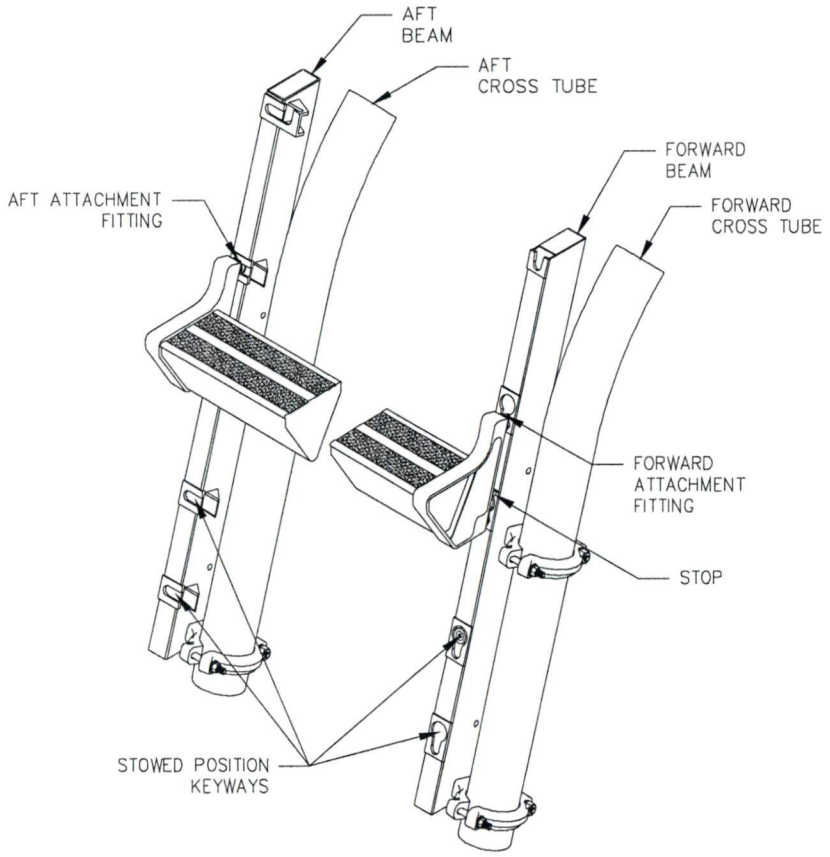


Figure 1 – Step Attachment Features

1. Installation - Refer to Figure 1.

   a) Slide step aft attachments fittings into keyways in aft beam.

   b) At forward end of step, lift step until lower attachment fitting hits stop.

   c) Push step attachment fittings into keyways and slide down until locked.

2. Removal - Refer to Figure 1.

   a) Pull knob on forward beam that is retaining step and lift step until forward attachment fittings are free of keyways.

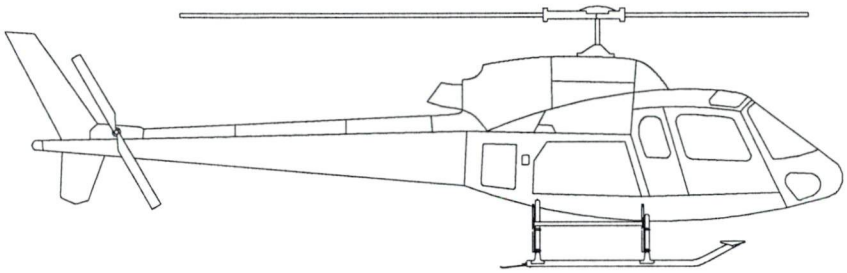
   b) Slide step forward until free of keyways on aft beam.

VII WEIGHT AND BALANCE

1. MAINTENANCE STEP 82701.

The following weight and balance is for the quick release maintenance step installed in accordance with drawing 82701. Upper (normal) and lower (stowed) positions are provided, either position is approved for flight.

Weight and balance is for Maintenance Step only. Refer to Flight Manual Supplement FMS764.91 for weight and balance for mounting provisions.



Quick Release Maintenance Step

Standard Units

Provisions Configuration	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
Right Hand						
High	Step	4.0	136.0	544.0	37.6	150.4
	Step (stowed)	4.0	136.0	544.0	40.3	161.2
Low	Step	4.0	136.0	544.0	38.3	153.2
	Step (stowed)	4.0	136.0	544.0	41.1	164.4
Eurocoper Pod	Step	4.0	136.0	544.0	40.3	161.2
Compatible	Step (stowed)	4.0	136.0	544.0	43.1	172.4
Left Hand						
High	Step	4.0	136.0	544.0	-37.6	-150.4
	Step (stowed)	4.0	136.0	544.0	-40.3	-161.2
Low	Step	4.0	136.0	544.0	-38.3	-153.2
	Step (stowed)	4.0	136.0	544.0	-41.1	-164.4
Eurocoper Pod	Step	4.0	136.0	544.0	-40.3	-161.2
Compatible	Step (stowed)	4.0	136.0	544.0	-43.1	-172.4

Metric Units

Provisions Configuration	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		Kg	mm	mm-Kg	mm	mm-Kg
Right Hand						
Low	Step	1.8	3454	6252	973	1751
	Step (stowed)	1.8	3454	6252	1044	1890
High	Step	1.8	3454	6252	955	1729
	Step (stowed)	1.8	3454	6252	1024	1853
Eurocoper Pod	Step	1.8	3454	6252	1024	1853
Compatible	Step (stowed)	1.8	3454	6252	1095	1981
Left Hand						
Low	Step	1.8	3454	6252	-973	-1751
	Step (stowed)	1.8	3454	6252	-1044	-1890
High	Step	1.8	3454	6252	-955	-1729
	Step (stowed)	1.8	3454	6252	-1024	-1853
Eurocoper Pod	Step	1.8	3454	6252	-1024	-1853
Compatible	Step (stowed)	1.8	3454	6252	-1095	-1981

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 827.92

EUROCOPTER AS350 & AS355 SERIES

FIXED CABIN STEPS

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Fixed Cabin Step installed in accordance with AERO Design Ltd. Document Control List DCL827-3, Revision 4, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 2
Date: 28 June 2010

AERO Design Ltd.
Engineering Consultants

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
0	20 October 2008		Original Issue
1	23 July 2009		
2	28 June 2010		

LIST OF EFFECTIVE PAGES

List of Revisions

Revision 0 (Original Issue)	20 October 2008
Revision 1	23 July 2009
Revision 2	28 June 2010

List of Effective Pages

Description	Pages	Revision No.
Cover	1	2
Revision Record/List of Effective Pages	2	2
Table of Contents	3	2
00-00-00	4-5	2
04-00-00	6	1
05-00-00	7-8	2
25-50-00	9-19	2

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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Fixed Cabin Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Fixed Cabin Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

The Long Fixed Cabin Step (82705-01) and Long Fixed Commuter Cabin Step (82751-01-XX) are NOT compatible with the AERO Design Ltd. Long Cargo Basket installed in accordance with STC SH08-16 (drawing 78401), but may be installed on the opposite side of the helicopter to the Long Cargo Basket.

The Short Fixed Cabin Step (82706-01) and Short Fixed Commuter Cabin Step (82750-01-XX) are compatible with all AERO Design Ltd. Cargo Baskets installed in accordance with STC SH08-16 in any mounting configuration.

The Full Length Cabin Step (82709-01) and Full Length Commuter Cabin Step (82752-01-XX) are NOT compatible with any AERO Design Ltd. Cargo Baskets installed in accordance with STC SH08-16, but may be installed on the opposite side of the helicopter to the Cargo Basket.

0-5 GENERAL DESCRIPTION

The Fixed Cabin Step installation consists of a step assembly which is attached to the forward end of the skid tube, running aft to the aft cross tube (full length configuration), to the forward cross tube (long configuration), or a bracket attached to the skid tube located under the door (short configuration). The different configurations are provided to accommodate AERO Design Ltd. Quick Release Cargo Baskets while providing the longest step possible for access to the cabin.

The step itself consists of an aluminum extrusion attached to a sheet metal assembly that attaches to the forward end of the skid tube. Aluminum brackets are used to attach the aft end.

The commuter step is an additional section added to the basic step that provides 3 steps up to the cabin. The steps are similar to the non-commuter configuration, but are reinforced at the forward end.

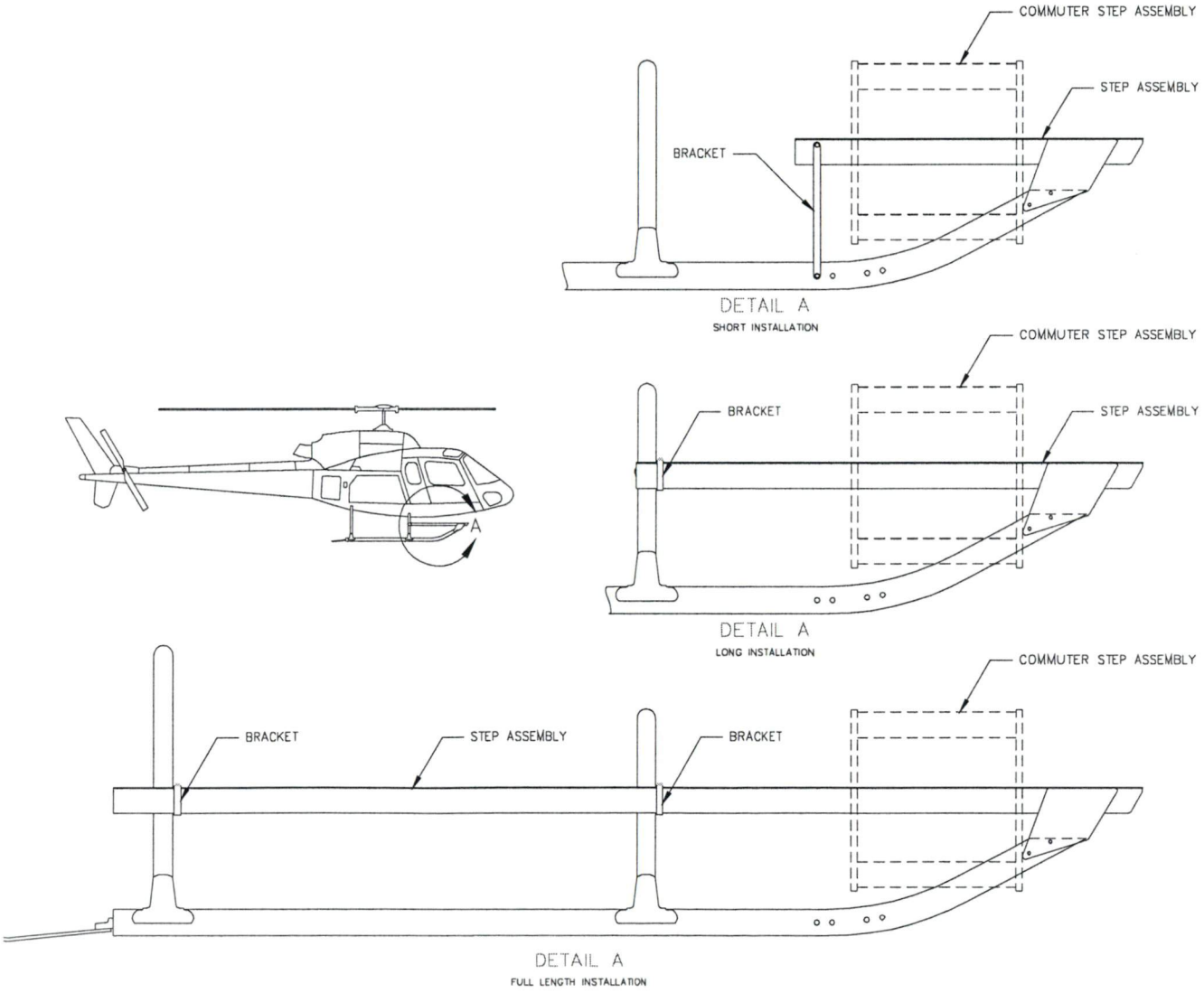


Figure 0-1 – AS350 Fixed Cabin Step Installations

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Fixed Cabin Steps.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Fixed Cabin Step.

Daily Inspection

1. Inspection Area: Step
   a) Full Length step only: Inspect the bracket and clamp attaching the step to the aft cross tube for condition and security.
   b) Long and Full Length steps only: Inspect the bracket and clamp attaching the step to the forward cross tube for condition and security.
   c) Short step only: Inspect bracket attaching aft end of step to skid tube for condition and security.
   d) Inspect the forward step attachment sheet metal bracket for condition and security.
   e) Commuter steps only: Inspect the attachments of the commuter step section to the basic step for condition and security.

100 Hour or Annual Inspection

1. Inspection Area: Step
   a) Visually inspect all mounting hardware for condition and security.
   b) Visually inspect step, mounting brackets, and clamps for condition and security.
   c) Long and Full Length steps only: Check clamps for slipping on the cross tube(s). Step should be parallel to the ground (+/- 0.25"), use height at attachment to forward tip of skid tube as a reference.

Special Inspections

1. Following a hard landing inspect the Fixed Cabin Step installation in accordance with the 100 hour or annual inspection listed above.
2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Step Assembly (including commuter step section)

Part	Type of Damage	Max. Allowable	Repair
Brackets, Clamps	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Step Section	Corrosion	2" x 2" x 0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long	Blend up to 0.010" deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" max at middle of step	None

2. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

¼-28 insert: 3591-4CN375

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

The tread areas have two strips of 3M Safety-Walk grip tape. If the grip tape is damaged replace with equivalent grip tape, or apply Randolph X1567 Wingwalk grip paint or equivalent to the top surface.

2. Brackets / Clamps

The brackets and clamps are supplied painted white. If the paint is damaged, touch up with white polyurethane paint.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Fixed Cabin Step Installation may be applied to the right and/or left side of the helicopter.

Installation of the Commuter Step (any configuration) is identical to the standard installation. Commuter Steps are "sided" right and left. The side is identified in the part number by the last dash number: -01 is Right, -02 is Left.

25-1 SHORT STEP INSTALLATION

Configuration: 82706-01 (standard), 82750-01-XX (commuter)

Refer to Figure 25-1 and 25-2.

1. Remove existing bolt, nut, and cups from last float provision hole at forward end of skid tube.
2. Insert Bushing 82733-02 into hole in skid tube. Set Bracket 82733-01 over bushing. Insert AN4-42A bolt with AN960-416 washer through bracket and bushing. Install AN960-416 washer and MS21044N4 nut on bolt. Do not tighten nut.
3. Set step assembly (82715-01 standard, 82718-01-XX commuter) on bracket. Install AN4-42A Bolt, AN960-416 Washers, and MS21044N4 Nut through bushing in step. Do not tighten nut.

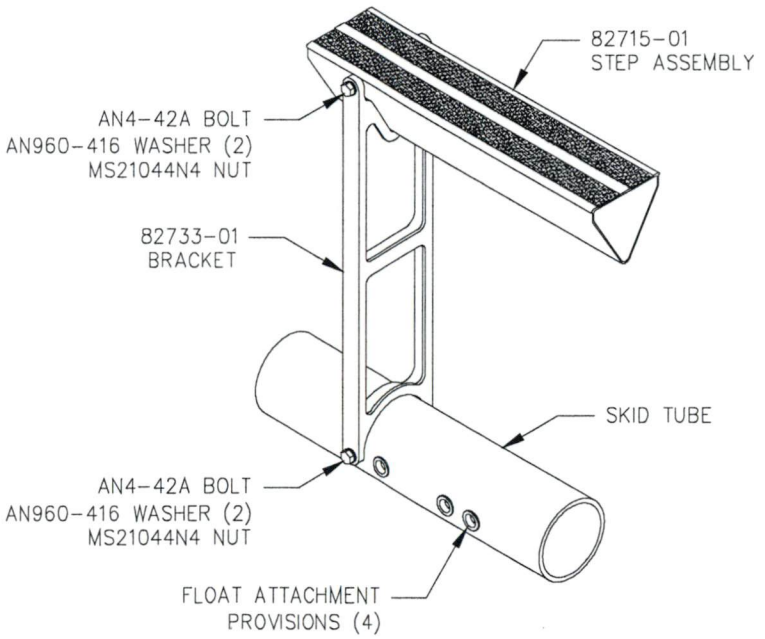


Figure 25-1 – Short Step Aft Attachment

4. At the forward end of the step, install two (2) AN3-35A Bolts, AN960-10 Washers, and MS21044N3 Nuts through existing holes in forward end of skid tube.

5. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

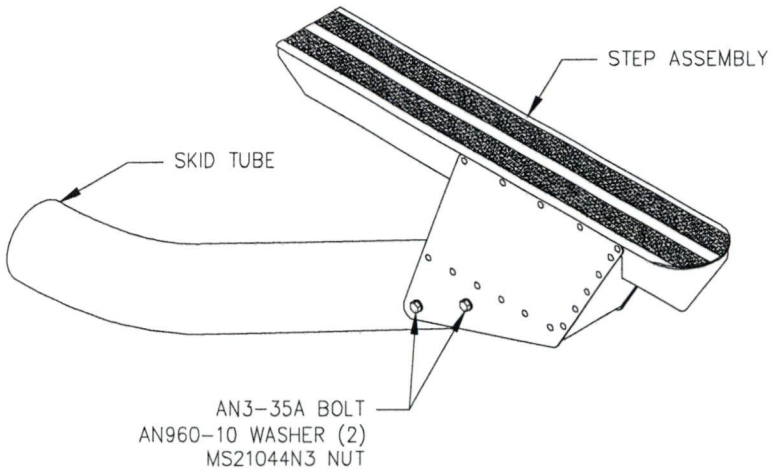


Figure 25-2 – Forward Step Attachment

25-2 SHORT STEP REMOVAL

Configuration: 82706-01 (standard), 82750-01-XX (commuter)

Refer to figure 25-1 and 25-2.

1. Remove AN3-35A Bolts, AN960-10 Washers, and MS21044N3 Nuts attaching forward end of step to skid tube.
2. Remove AN4-42A Bolt, AN960-416 Washers, and MS21044N4 Nut attaching step to bracket. Remove step.
3. Remove AN4-42A Bolt, AN960-416 Washers, and MS21044N4 Nut attaching bracket to skid tube. Remove bracket and bushing from skid tube.
4. Install 22201TK050-072X Screw, 350A41-1095-20 Cup (2), 23119TK050X Washer, and ASN52320BH050N Nut in hole in skid tube. Refer to Illustrated Parts book and Maintenance Manual.

25-3 LONG STEP INSTALLATION

Configuration: 82705-01 (standard), 82751-01-XX (commuter)

Refer to Figure 25-3 thru 25-5.

1. Attach Clamp Assembly 78620-01 to Bracket 82723-01 with one (1) AN4-4A Bolt and AN960-416 Washer. Orient clamp with T-bolt side inboard, and bracket forward. Torque bolt to 30-40 in-lbs. Slide bracket with clamp onto aft end of step.

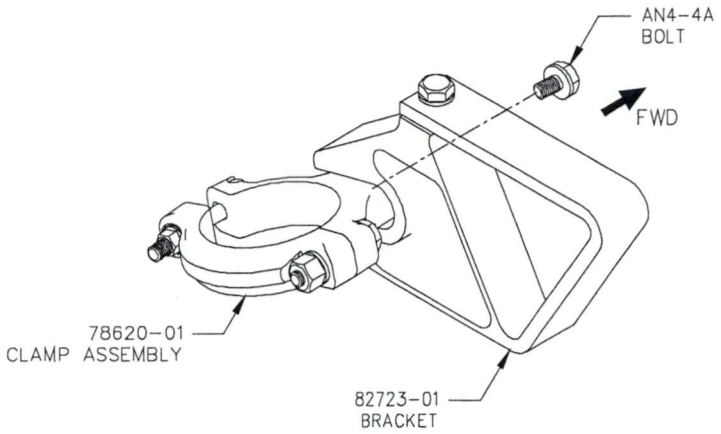


Figure 25-3 – Clamp and Bracket Assembly
(Right side shown, left side opposite)

2. Locate forward end of step assembly (82717-01 standard, 82718-02-XX commuter) on skid tube. Install two (2) AN3-35A Bolts, AN960-10 Washers, and MS21044N3 Nuts into existing holes in forward end of skid tube.

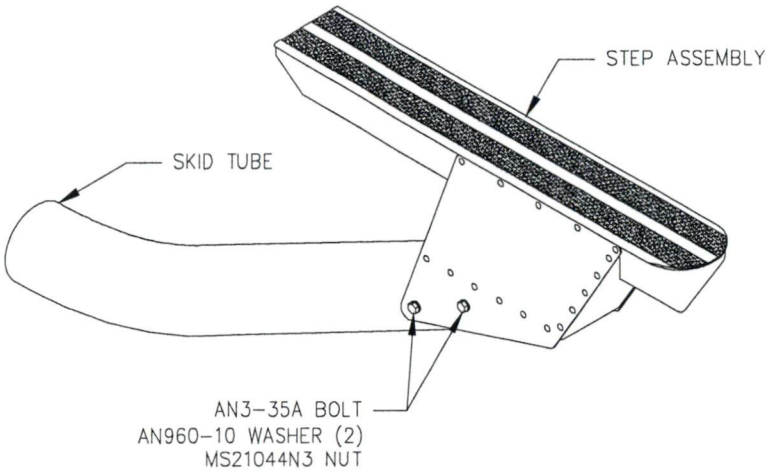


Figure 25-4 – Forward Step Attachment

3. Slide clamp and bracket assembly aft along step until clamp can be attached to forward cross-tube. Bracket can be opened with a flat head screwdriver if necessary.

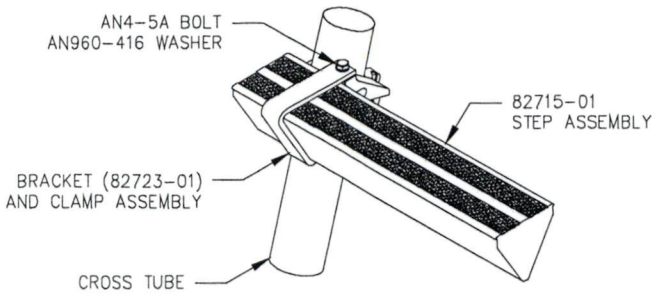


Figure 25-5 – Long Step Aft Attachment

4. Tighten clamp bolts to prevent the clamp from slipping on the cross tube.
5. Level the step parallel to the ground (+/- 0.25"). Nominal height is 17.5".
6. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

25-4 LONG STEP REMOVAL

Configuration: 82705-01 (standard), 82751-01-XX (commuter)

Refer to Figure 25-3 thru 25-5.

1. Remove AN3-35A Bolts, AN960-10 Washers, and MS21044N3 Nuts attaching forward end of step to skid tube.
2. Remove bolts securing clamp to cross tube.
3. Remove step assembly.

25-5 FULL LENGTH STEP INSTALLATION

Configuration: 82709-01 (standard), 82752-01-XX (commuter)

Refer to Figure 25-6 thru 25-8.

1. Attach Clamp 78620-01 to Bracket 82723-01 with AN4-4A Bolt and AN960-416 Washer. Orient clamp with T-bolt side inboard, and bracket on forward side of cross tube. Torque bolt to 30-40 in-lbs. Slide bracket with clamp onto aft end of step. See figure 25-6. Repeat for second Bracket.

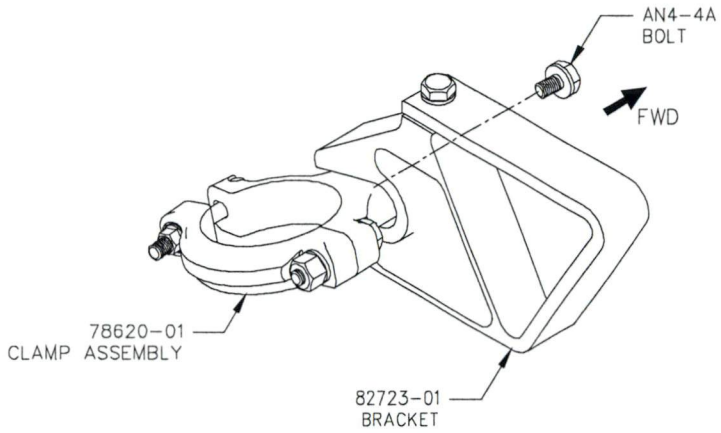


Figure 25-6 – Clamp and Bracket Assembly
(Right side shown, left side opposite)

2. Locate forward end of step assembly on forward end of skid tube. Install two (2) AN3-35A Bolt, AN960-10 Washers, and MS21044N3 Nut into existing holes in forward end of skid tube. See figure 25-7.

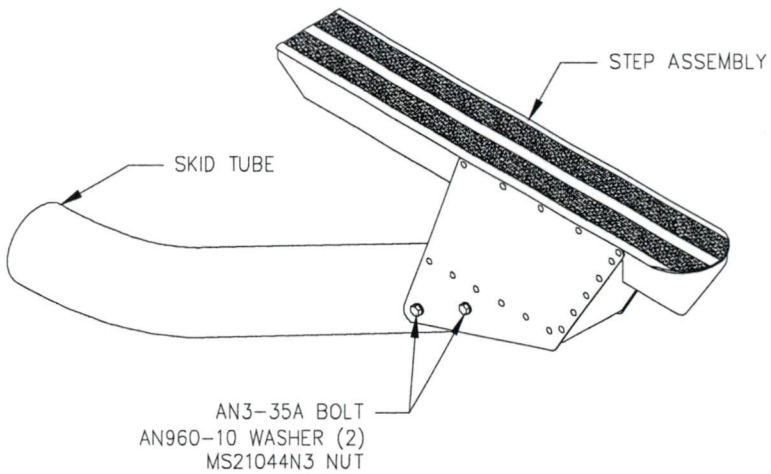


Figure 25-7 – Forward Step Attachment

3. Slide clamp and bracket (82723-01) assembly along step until clamp can be attached to forward cross-tube. Bracket can be opened with a flat head screwdriver if necessary. Repeat at aft cross tube. See Figure 25-8

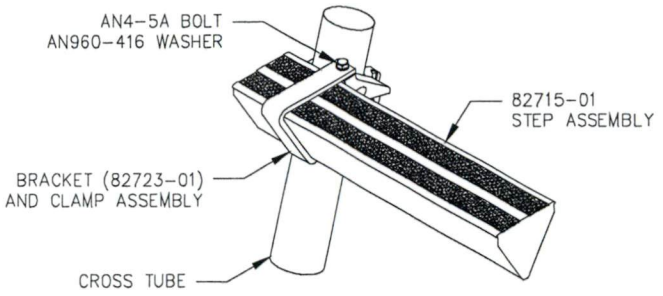


Figure 25-8 – Aft Step Attachment

4. Tighten clamp bolts to prevent the clamp from slipping on the cross tube.
5. Level the step parallel to the ground (+/- 0.25"). Nominal height is 17.5".
6. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

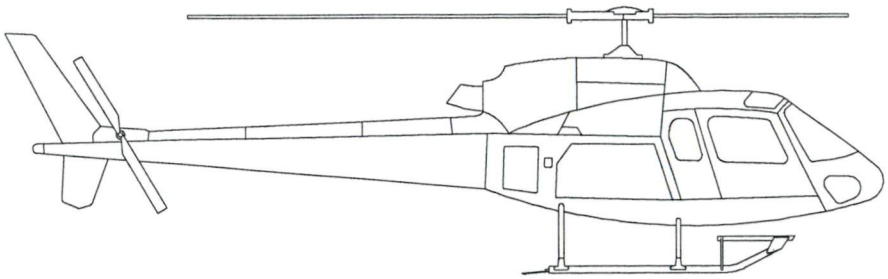
25-6 FULL LENGTH STEP REMOVAL

Configuration: 82709-01

Refer to figures 25-6 thru 25-8.

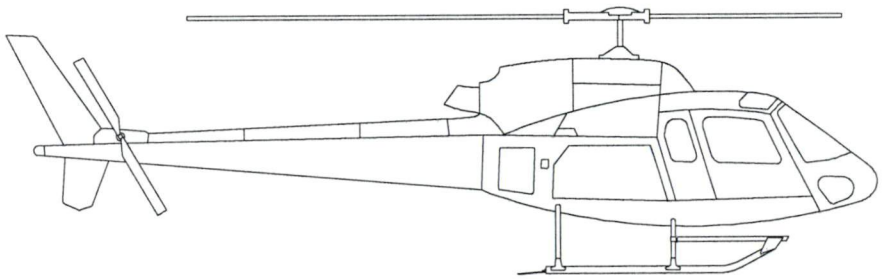
1. Remove fasteners from clamps on forward and aft cross tubes.
2. Remove AN3-35A bolts, washers and nuts attaching forward end of step to forward tip of skid tube.
3. Remove step assembly.

25-7 BILL OF MATERIALS



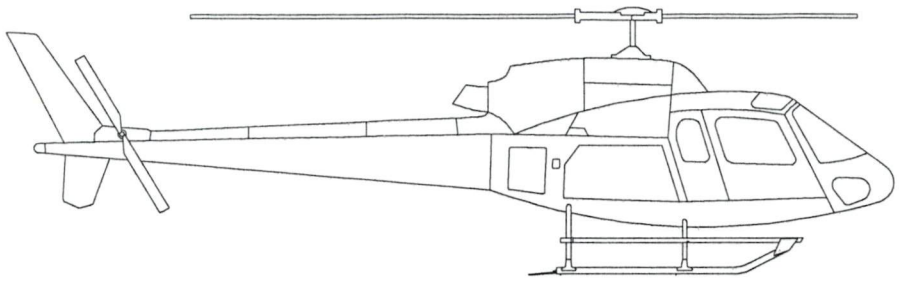
SHORT CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82706-01	**Short Cabin Step Installation**
. 1	82715-01	Step Assembly
. 1	82733-01	Bracket
. 1	82733-02	Bushing
. 2	AN4-42A	Bolt
. 4	AN960-416	Washer
. 2	MS21044N4	Nut
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



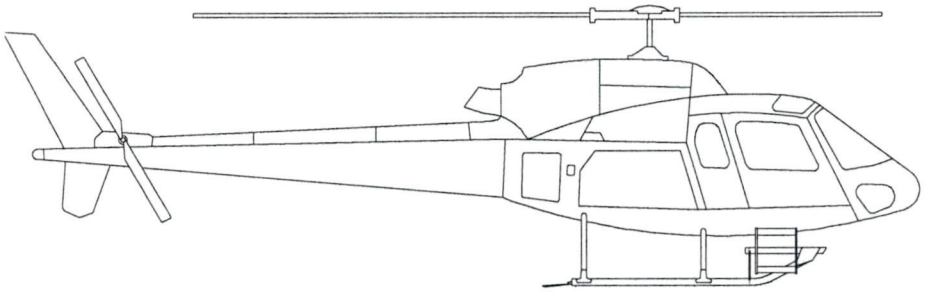
LONG CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82705-01	**Long Cabin Step Installation**
. 1	82717-01	Step Assembly
. 1	82723-01	Bracket
. 1	78620-01	Clamp Assembly
. 1	AN4-4A	Bolt
. 1	AN4-5A	Bolt
. 2	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



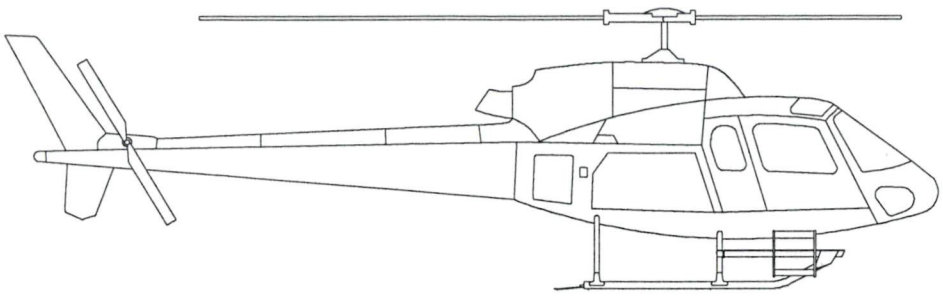
FULL LENGTH CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82709-01	**Full Length Cabin Step Installation**
. 1	82717-02	Step Assembly
. 2	82723-01	Bracket
. 2	78620-01	Clamp Assembly
. 2	AN4-4A	Bolt
. 2	AN4-5A	Bolt
. 4	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



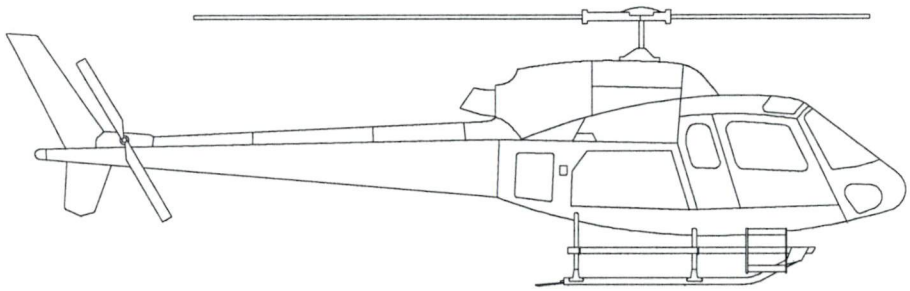
SHORT COMMUTER CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82750-01-01	**Short Commuter Cabin Step Installation (RH)**
	82750-01-02	**Short Commuter Cabin Step Installation (LH)**
. 1	82718-01-01	Step Assembly (RH)
. 1	82718-01-02	Step Assembly (LH)
. 1	82733-01	Bracket
. 1	82733-02	Bushing
. 2	AN4-42A	Bolt
. 4	AN960-416	Washer
. 2	MS21044N4	Nut
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



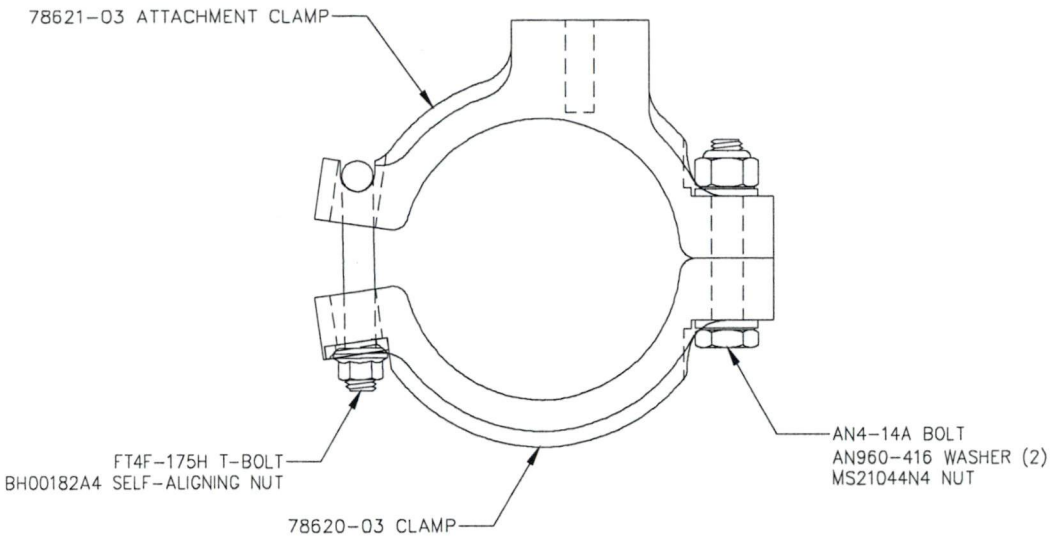
LONG COMMUTER CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82751-01-01	**Long Commuter Cabin Step Installation (RH)**
	82751-01-02	**Long Commuter Cabin Step Installation (LH)**
. 1	82718-02-01	Step Assembly (RH)
. 1	82718-02-02	Step Assembly (LH)
. 1	82723-01	Bracket
. 1	78620-01	Clamp Assembly
. 1	AN4-4A	Bolt
. 1	AN4-5A	Bolt
. 2	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



FULL LENGTH COMMUTER CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82752-01-01	**Full Length Commuter Cabin Step Installation (RH)**
	82752-01-02	**Full Length Commuter Cabin Step Installation (LH)**
. 1	82718-03-01	Step Assembly (RH)
. 1	82718-03-02	Step Assembly (RH)
. 2	82724-01	Bracket
. 2	78620-01	Clamp Assembly
. 2	AN4-4A	Bolt
. 1	AN4-5A	Bolt
. 3	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



CLAMP ASSEMBLY

Qty.	Part Number	Description
	78620-01	**Clamp Assembly**
. 1	78620-02	Attachment Clamp (with mounting pad)
. 1	78620-03	Clamp (no mounting pad)
. 1	AN4-14A	Bolt
. 2	AN960-416	Washer
. 1	MS21044N4	Nut
. 1	FT4F-175H	T-Bolt
. 1	BH00182A4	Self Aligning Nut

25-8 WEIGHT AND BALANCE

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82706-01	Short Cabin Step Installation	4.2	69.1	290.2	39.4	165.5
82705-01	Long Cabin Step Installation	5.0	76.2	381.0	39.4	197.0
82709-01	Full Length Cabin Step Installation	9.8	107.9	1057.4	39.4	386.1
82750-01-XX	Short Commuter Cabin Step Installation (-01 RH / -02 LH)	12.2	70.7	862.2	41.9	511.1
82751-01-XX	Long Commuter Cabin Step Installation (-01 RH / -02 LH)	13.0	73.3	953.0	41.7	542.6
82752-01-XX	Full Length Commuter Cabin Step Installation (-01 RH / -02 LH)	17.8	91.5	1629.4	41.1	731.7

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	Arm	moment
		kg	mm	mm-kg	Mm	mm-kg
82706-01	Short Cabin Step Installation	1.9	1755	3335	1000	1900
82705-01	Long Cabin Step Installation	2.3	1935	4378	1000	2260
82709-01	Full Length Cabin Step Installation	4.4	2741	12155	1000	4434
82750-01-XX	Short Commuter Cabin Step Installation (-01 RH / -02 LH)	5.5	1795	9910	1064	5874
82751-01-XX	Long Commuter Cabin Step Installation (-01 RH / -02 LH)	5.9	1862	10953	1060	6236
82752-01-XX	Full Length Commuter Cabin Step Installation (-01 RH / -02 LH)	8.1	2325	18727	1044	8410

Note: Lateral arms are given for right side installation. For installation on left side, lateral arms are negative.

25-9 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual for torque values not listed in this ICA.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 827.91

EUROCOPTER AS350 & AS355 SERIES

QUICK RELEASE MAINTENANCE STEP

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release Maintenance Step installed in accordance with AERO Design Ltd. Document Control List DCL827-1, Revision 4, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 3
Date: 28 June, 2010

AERO Design Ltd.
Engineering Consultants

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
0			Original Issue
1	23 July 2009		
2	05 January 2010		
3	28 June 2010		

LIST OF EFFECTIVE PAGES

List of Revisions	Revision 0 (Original Issue)	20 October, 2008
	Revision 1	23 July, 2009
	Revision 2	05 January 2010
	Revision 3	28 June 2010

List of Effective Pages

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Revision Record/List of Effective Pages	2	3
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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Maintenance Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Maintenance Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

Quick Release Cargo Basket Installation:

The Quick Release Maintenance Step must be installed in the lower (stowed) position prior to installation of the AERO Design Ltd. Cargo Baskets in accordance with STC SH08-16.

0-5 GENERAL DESCRIPTION

The Quick Release Maintenance Step installation consists of a step assembly which is attached to quick release mounting provisions installed on the helicopter. These mounting provisions are capable of mounting various equipment including cargo baskets.

The step itself consists of an aluminum extrusion attached to brackets on the ends with fittings that lock into the quick release mechanism.

Two positions are provided: upper for use in maintenance activities and lower for stowing under a cargo basket.

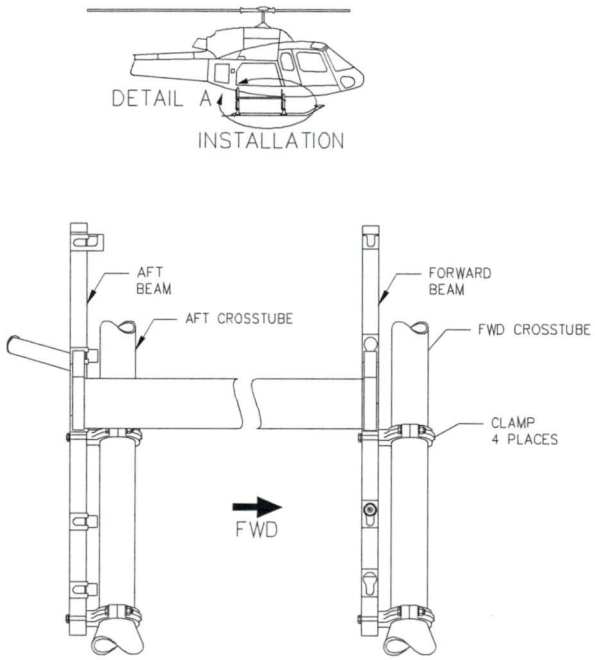


Figure 0-1 – AS350 Quick Release Maintenance Step Installation

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Quick Release Maintenance Step.

CHAPTER 5 – INSPECTION REQUIREMENTS

Refer to ICA764.90 for inspection requirements for the Quick Release Mounting Provisions not included below.

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Quick Release Maintenance Step.

Daily Inspection

1. Inspection Area: Step
   a) Inspect the step attachment to the beams for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.

100 Hour or Annual Inspection

Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for inspection of mounting provisions.

1. Inspection Area: Step
   a) Visually inspect welds attaching end brackets to step extrusion for cracks, corrosion or other damage.
   b) Visually inspect step for damage.
   c) Visually inspect lugs attaching the step to the beams for security and damage.

Special Inspections

1. Following a hard landing inspect the Quick Release Maintenance Step installation in accordance with the 100 hour or annual inspection listed above.
2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for further limits and repair instructions.

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Step Assembly

Part	Type of Damage	Max. Allowable	Repair
Step End Bracket	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Centre Step Section	Corrosion	2" x 2" x 0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long	Blend up to 0.010" deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" max at middle of step	None

2. Steel Beams

Part	Type of Damage	Max. Allowable	Repair
Steel Beam	Corrosion	0.015" deep	Blend up to 0.015" deep with scotchbrite.
	Scratches / Nicks	0.015" deep x 0.125" wide	Blend up to 0.015" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Elongation of Keyway	See figure 5-1 and 5-2	None
	Widening of slots	15/32" (0.469) diameter maximum (check with a 15/32" drill)	None

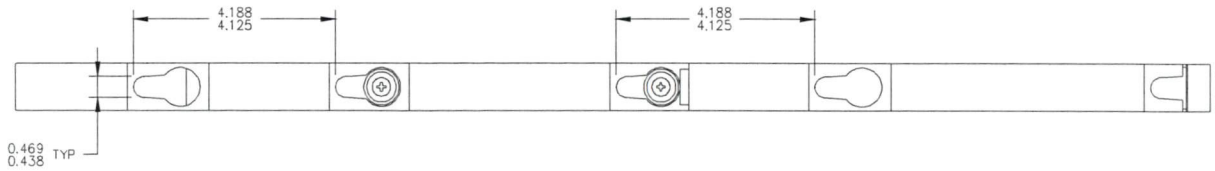


Figure 5-1 – Critical Keyway Dimensions (Forward Beam)

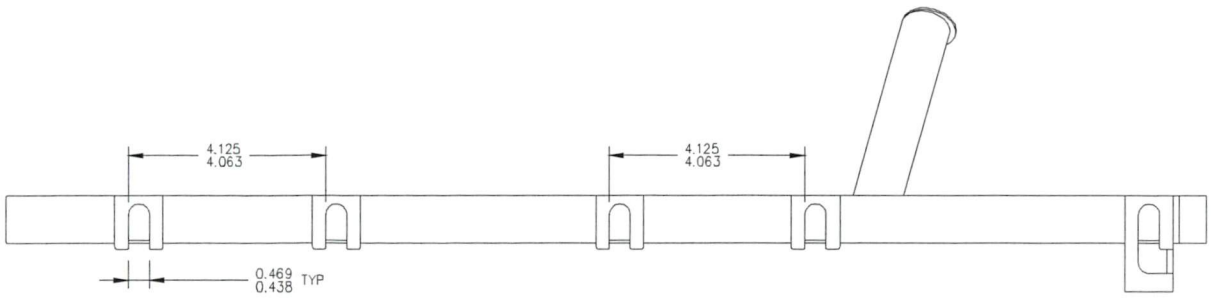


Figure 5-2 – Critical Keyway Dimensions (Aft Beam

3. Step Welds

Cracks up to 0.25" long may be repaired as follows:

a) Clean area of paint.

b) Grind away weld in area of crack.

c) T.I.G. weld per MIL-STD-2219 Class "C" using ER4043 filler rod. Do not grind flush.

d) Touch up paint as noted in section 5-3.

4. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

¼-28 insert: 3591-4CN375

3/8-24 insert: 3591-6CN563

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint. The tread area has two 1" strips of 3M Safety-Walk grip tape. If the grip tape is damaged, replace with equivalent grip tape, or apply Randolph X1567 Wingwalk grip paint or equivalent to the top surface.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Quick Release Maintenance Step Installation may be applied to the right and/or left side of the helicopter. Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for installation, inspection, repair and removal instructions for the mounting provisions.

25-1 STEP INSTALLATION

Refer to Figure 4.

1. Set aft attachment fittings into keyways in aft beam.
2. At forward beam, lift step until lower attachment fitting hits stop.
3. Push forward attachment fittings into keyways and slide step down until locked.

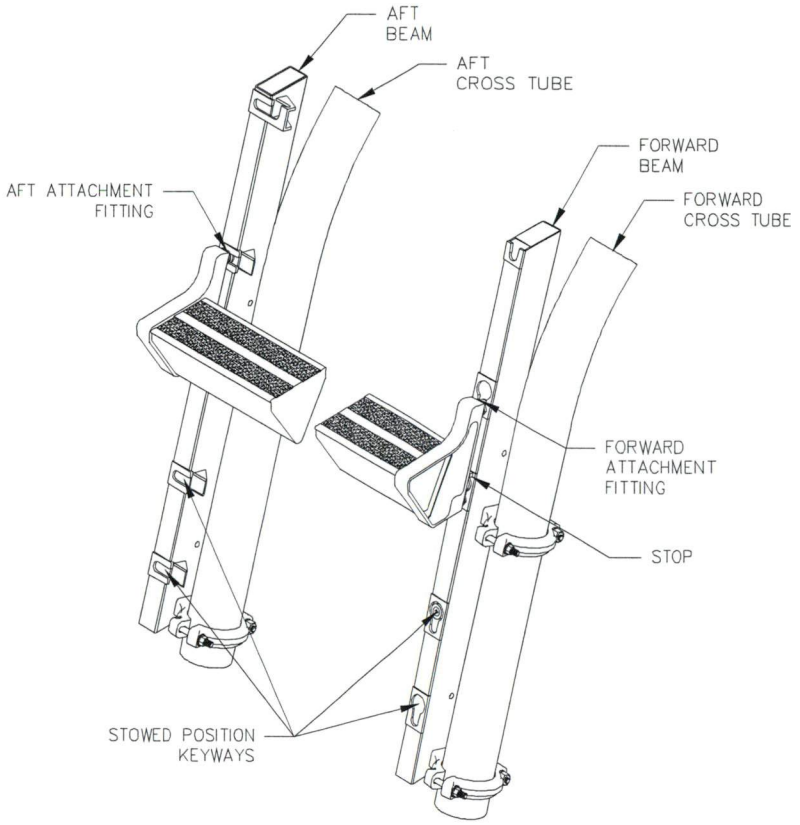


Figure 25-1 – Step Attachment

25-2 STEP REMOVAL

Refer to Figure 4.

1. Pull knob at bottom end of forward beam and lift step until forward attachment fittings are free of keyways.
2. Slide step forward until free of keyways on aft beam.

25-3 WEIGHT AND BALANCE

Different weight and balance configurations are required for the pilot. The first is the installation of Mounting Provisions only. The second is Provisions and Step in the upper position. The third is Provisions and Step in the lower (stowed) position.

Standard

P/N *	Description	Weight	Longitudinal		Lateral **	
			arm	moment	arm	moment
	Low Provisions Configuration	lb	in	in-lb	in	in-lb
78602-01-XX	Low Provisions Installation	6.4	135.6	867.5	37.2	238.0
82716-01	Maintenance Step	4.0	136.0	544.0	38.3	153.2
82701-01	**Step Installation**	**10.4**	**135.7**	**1411.5**	**37.6**	**391.2**
78602-01-XX	Low Provisions Installation	6.4	135.6	867.5	37.2	238.0
82716-01	Maintenance Step (stowed)	4.0	136.0	544.0	41.1	164.4
82701-01	**Step Installation (stowed)**	**10.4**	**135.6**	**1411.5**	**38.7**	**402.4**
	High Provisions Configuration					
78602-02-XX	High Provisions Installation	6.4	135.6	867.5	36.5	233.8
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	37.6	150.4
82701-01	**Step Installation**	**10.4**	**135.6**	**1411.5**	**36.9**	**384.2**
78602-02-XX	High Provisions Installation	6.4	135.6	867.5	36.5	233.8
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	40.3	161.2
82701-01	**Step Installation (stowed)**	**10.4**	**135.6**	**1411.5**	**38.0**	**395.0**
	Eurocopter Pod Compatible Configuration					
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	6.8	135.4	921.0	38.8	263.6
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	40.3	161.2
82701-01	**Step Installation**	**10.8**	**135.6**	**1465.0**	**39.3**	**424.8**
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	6.8	135.4	921.0	38.8	263.6
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	43.1	172.4
82701-01	**Step Installation (stowed)**	**10.8**	**135.6**	**1465.0**	**40.4**	**436.0**

* -XX indicates side. Right side is -01, Left side is -02.

**Lateral arm is negative for left side installation.

Table 25-1 – Quick Release Maintenance Step Weight and Balance

Metric

P/N *	Description	Weight	Longitudinal		Lateral **	
			arm	moment	arm	moment
	Low Provisions Configuration	kg	mm	mm-kg	mm	mm-kg
78602-01-XX	Low Provisions Installation	2.9	3443	9971	945	2735
82716-01	Maintenance Step	1.8	3454	6252	973	1751
82701-01	**Step Installation**	**4.7**	**3447**	**16223**	**955**	**4496**
78602-01-XX	Low Provisions Installation	2.9	3443	9971	945	2735
82716-01	Maintenance Step (stowed)	1.8	3454	6252	1044	1890
82701-01	**Step Installation (stowed)**	**4.7**	**3447**	**16223**	**983**	**4625**
	High Provisions Configuration					
78602-02-XX	High Provisions Installation	2.9	3443	9971	928	2688
82716-01	Quick Release Maintenance Step	1.8	3454	6252	955	1729
82701-01	**Step Installation**	**4.7**	**3447**	**16223**	**938**	**4416**
78602-02-XX	High Provisions Installation	2.9	3443	9971	928	2688
82716-01	Quick Release Maintenance Step	1.8	3454	6252	1024	1853
82701-01	**Step Installation (stowed)**	**4.7**	**3447**	**16223**	**965**	**4540**
	Eurocopter Pod Compatible Configuration					
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	3.1	3440	10585	985	3030
82716-01	Quick Release Maintenance Step	1.8	3454	6252	1024	1853
82701-01	**Step Installation**	**4.9**	**3445**	**16837**	**999**	**4882**
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	3.1	3440	10585	985	3030
82716-01	Quick Release Maintenance Step	1.8	3454	6252	1095	1981
82701-01	**Step Installation (stowed)**	**4.9**	**3445**	**16837**	**1025**	**5011**

* -XX indicates side. Right side is -01, Left side is -02.

**Lateral arm is negative for left side installation.

Table 25-2 – Quick Release Maintenance Step Weight and Balance

25-4 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual for torque values not listed in this ICA.

AERO Design Ltd.

ENGINEERING REPORT

ER827.03

EURCOPTER AS350/AS355

DART CABIN STEPS MODIFICATION

Prepared by: Jeff Clarke, CET

Approved by: E. Burgoin, P.Eng., DAR 290M

Revision 1, 20 July 2012

AERO Design Ltd.
Engineering Consultants
www.aerodesign.ca

2013 – 39th Avenue N.E., Calgary, Alberta T2E 6R7
Phone: (403) 250-8027
Fax: (403) 250-8333

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1.0 INTRODUCTION

Eurocopter AS350 and AS355 helicopters are delivered new from the factory with DART cabin steps installed. When AERO Design Cargo Baskets are installed, the DART step must be removed, and a new AERO Design Step is installed. This increases cost to the end customer, and the DART step is essentially wasted.

This installation modifies the DART step to be compatible with AERO Design Ltd. Cargo Baskets. There are two configurations:

1) Short Step – compatible with long AERO Design Cargo Baskets
2) Long Step – compatible with medium and short AERO Design Cargo Baskets.

The modification requires the step to be cut at the indicated length, a cap is installed in the cut end, and the step is installed on the helicopter with a supplied bracket.

This report demonstrates that the DART step, as modified, complies with the applicable regulations.

Revision 1 – Addition of configurations to accommodate older profile of extrusion used in DART steps.

2.0 REFERENCE TEXT

AERO Design Ltd. drawing 82770, 82771, 82772, 82773

3.0 BASIS OF CERTIFICATION

Eurocopter AS350 & AS355 Series, TCDS H-83/ H-87:

FAR 27, Amendment 27-20, plus select sections of later Amendments (AS355NP basis of certification).

This report demonstrates that the installation of the modified cabin steps complies with the original basis of certification.

4.0 APPLICABILITY OF AIRWORTHINESS DIRECTIVES

Airworthiness Directives applicable to the Eurocopter AS350 and AS355 series were reviewed, and none were found to affect this project.

5.0 LOADS

5.1 Fixed Cabin Steps

5.1.1 Inertia Loads

W_{step} = 6.8 lbs — Weight of long step (82771-10)

n_{man_pos} = 3.5 — Limit positive maneuvering load factor (Ref: FAR 27.337)

n_{sf} = 1.5 — Safety Factor (Ref: FAR 27.303)

$n_{ult\_man\_pos} = n_{man\_pos} \times n_{sf}$

$n_{ult\_man\_pos} = 3.5 \times 1.5 = 5.25$ — Ultimate positive maneuvering load factor

$P_{ult\_man\_pos} = W_{step} \times n_{ult\_man\_pos}$

$P_{ult\_man\_pos}$ = 35.7 lbs — Ultimate positive maneuvering load

The cabin steps are not intended to be used in flight. As such, there is no requirement for the application of maneuvering inertia loads due to a person on the step. However, the step is checked for ultimate inertia load applied by one person to allow for the possibility of use during rappel or similar operations.

W_{person} = 170 lbs — Weight of person

$P_{ult\_man\_pos} = W_{person} \times n_{ult\_man\_pos}$

$P_{ult\_man\_pos}$ = 892.5 lbs — Ultimate positive maneuvering load applied to step by 1 person

5.1.2 Aerodynamic Loads

Drag

$A_f := 19.0 \cdot in^2$ — Frontal Area of Fixed Cabin Steps

$V_{ne} := 155 \cdot knots$ — Never Exceed Speed of AS350/AS355/EC135 (Highest of all models)

$V_d := \frac{V_{ne}}{0.9}$

$V_d = 172.2 knots$ — Design Dive Speed

$\rho := 0.002378 \frac{slug}{ft^3}$ — Air Density at Sea Level

$C_{Do} := 2.0$ Coefficient of Drag (conservative)

$P_{drag} := \frac{\rho}{2} \cdot V_d^2 \cdot A_f \cdot C_{Do}$

$P_{drag} = 26.5\text{lbf}$ Limit drag at V_d

$n_{sf} := 1.5$ Factor of Safety

$P_{drag\_ult} := P_{drag} \cdot n_{sf}$

$P_{drag\_ult} = 39.7\text{lbf}$ Ultimate drag at V_d

Lift

$A_{lift} := 3.02\text{in} \cdot 57 \cdot \text{in}$

$A_{lift} = 172.1\text{in}^2$ Planar area of step (long step, 82771-01)

Coefficient of lift for round tubes relative to airflow varies from near 0 at 0 to 0.4 at about 60°.

$C_L := 0.4$ Coefficient of lift (Max. for a round tube, ~60° to air flow) (ref: Hoerner, Fig. 18)

$P_{lift} := C_L \cdot \frac{\rho}{2} \cdot V_d^2 \cdot A_{lift}$

$P_{lift} = 48\text{lbf}$ Limit lift on step at V_d

$P_{lift\_ult} := P_{lift} \cdot n_{sf}$

$P_{lift\_ult} = 72\text{lbf}$ Ultimate lift on step at V_d

6.0 STRUCTURAL ANALYSIS

6.1 Fixed Cabin Steps

The aerodynamic drag and lift loads are small and by inspection can be carried by the step assembly and its attachments.

The forward attachment is not changed from the original configuration.

The aft attachment of the long step (82771-01) is identical to configuration 82705-01, which was tested in ER827.02.

The aft attachment of the short step (82770-01) is identical to configuration 82706-01, which was tested in ER827.02.

The step extrusion is not changed, and the loads applied to the step are not changed from the original configuration.

6.2 Fixed Cabin Steps – Old Profile Extrusion

The configurations originally approved are the current configuration of DART steps (P/N D350-591-311, -312, -213, -214). An older profile of step extrusion can still be found on older helicopters.

The extrusion is heavier, the long step is 9.5 lbs vs. 6.8 lbs. The weight difference is not significant, maneuvering loads on the step are not critical.

The aerodynamic drag and lift loads are small and by inspection can be carried by the step assembly and its attachments.

The forward attachment is not changed from the original configuration.

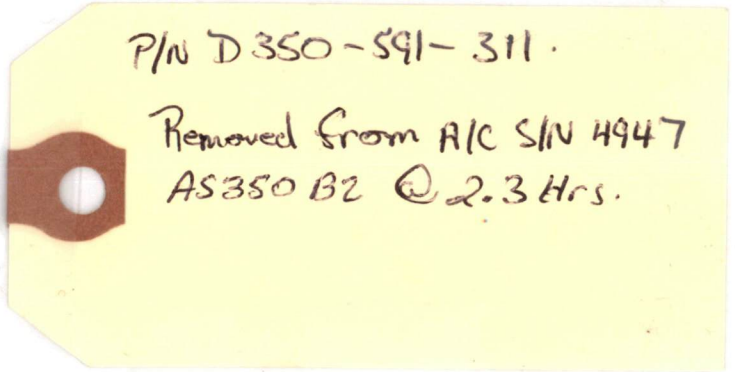
The aft attachment of the long step (82773-01) is identical to configuration 82705-01, which was tested in ER827.02.

The aft attachment of the short step (82772-01) is identical to configuration 82706-01, which was tested in ER827.02.

The step extrusion is not changed, and the loads applied to the step are not changed from the original configuration.

7.0 COMPLIANCE WITH 27.251 AND 27.629

The configuration of the attachment provisions are not changed from the existing approved configurations, and the step section is not changed. The flutter and vibration characteristics are not changed from the basic approved configuration.


P/N D350-591-311.
Removed from A/C S/N 4947
AS350 B2 @ 2.3 Hrs.

Shipping Note

10-410-148

eurocopter
an EADS Company
thinking without limits

Ship To: AERO DESIGN LTD
Address: 2013-39 AVENUE N.E.

CALGARY, ALBERTA T2E 6R7
CANADA

Attention: TED - JEFF
Telephone: 403-250-8027

Ship Note No.: 10-410-148
Date Shipped: 24-Nov-10
Service Level: 2-3 Days
Freight To: Collect
Carrier PUROLATER
Acct # 4367155

RMA:
Waybill No.:
Originator: Henry, David M.

Remarks:

ITEM	PART NO. / DESCRIPTION	QTY	UNIT PRICE ($)	TOTAL ($)
1	D350-591-311 LH BOARDING STEP	1		USD

VALUE FOR CUSTOM PURPOSES ONLY

Total: USD

Riemer, Derek

From: Kadwell, Joe
Sent: Tuesday, November 30, 2010 8:37 AM
To: Riemer, Derek; Wright, Tim
Cc: Boucher, Annie; Auld, Blair
Subject: FW: AS350 Dart Step

We have permission to cut darts step to ship back Purolator take only 10 ft

Derek can u arrange to Cut the step @ 66" from the forward tip. Should go on Purolator at that length.

Joe its with Tim Wright

See below

From: Jeff Clarke [mailto:jeff@aerodesign.ca]
Sent: Friday, November 26, 2010 5:09 PM
To: Kadwell, Joe
Subject: RE: AS350 Dart Step

We will be modifying it to work with our basket, so it will be getting cut down anyways.

Here's the email from Capital:

Thanks

From: Christopher Stapor [mailto:cstapor@capitalehelipro.com]
Sent: Tuesday, October 26, 2010 2:06 PM
To: marc lajoie; Boucher, Annie; Ted Burgoin
Subject: Dart steps

As discussed during my visit to Ft Erie, I would like to have the L/H Dart long step that is installed on our a/c s/n 4947 be shipped to Ted at Aero design. I imagine that the certificate must be issued prior to installation of our Basket, so once that is done and the Aero Design kit is installed, please fwd the step to Ted
-- Regards

Christopher Stapor
Director of Maintenance
230-D 2e Avenue de l'Aéroport
Québec, G2G 2T2
Téléphone: 1 418-871-4466
Cell: 1 418-717-7251
www.capitalehelicoptere.com

From: Kadwell, Joe [mailto:Joe.Kadwell@eurocopter.ca]
Sent: November 26, 2010 2:08 PM
To: Jeff Clarke
Subject: RE: AS350 Dart Step

Jeff Clarke

From: Adam Caldwell [adam@accessheli.com]
Sent: April 25, 2015 2:25 PM
To: jeff@aerodesign.ca
Cc: Mike Holcroft
Subject: Short step Bushing

Hi Phil,

The bushing worked well in the hole of the skid tube. I think it was .395". It could have been slightly larger but with some mastinox it worked well.

I just got out to another machine of ours and grabbed the step and it is rattling around so the bushing needs to be installed in that as well.

I would recommend if this was the case in any other installations that the bushing be installed before further damage of the bolt, skid tube, or worst case scenario down the road someone gets hurt.

Could you please make up another Bushing and send it this way.

Attn: Adam

Access Helicopters Ltd.
12 Ranchers Place
Okotoks, AB
T1S 0G5

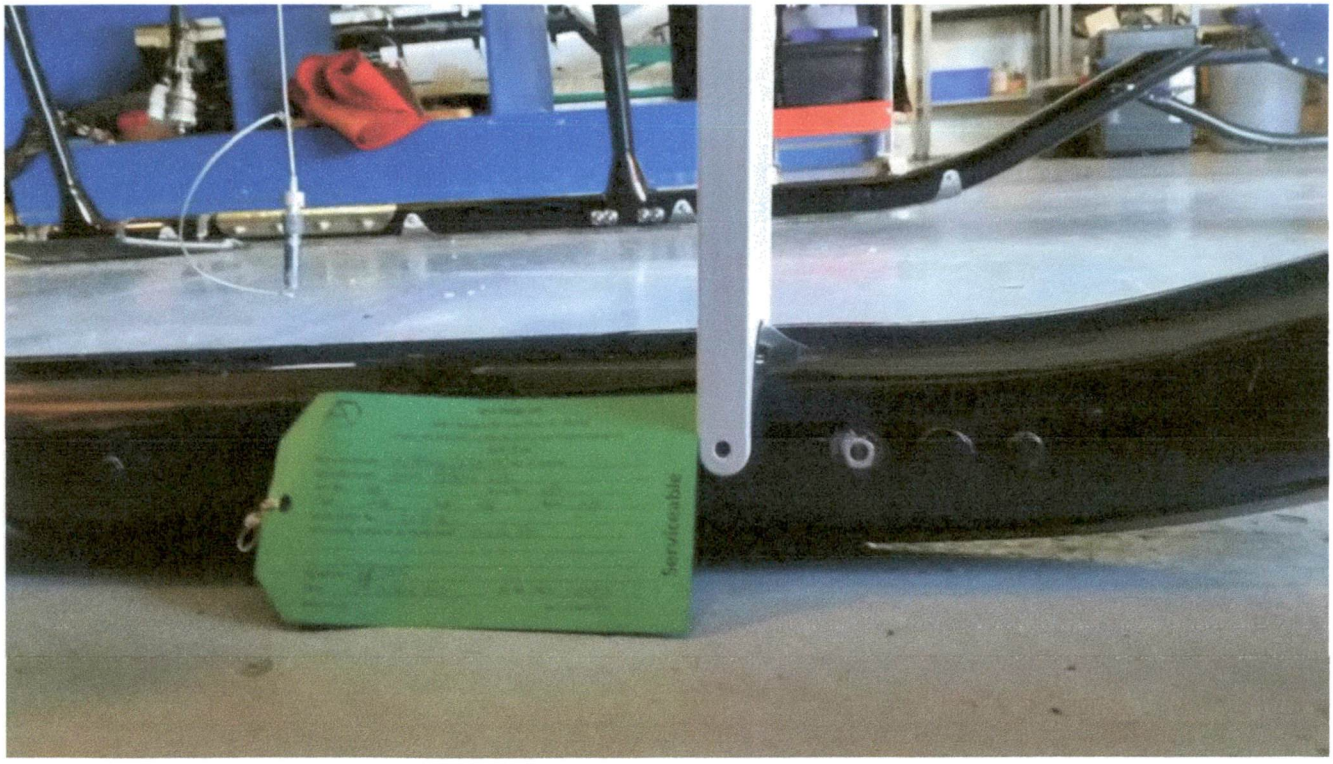


image.jpeg

Thank you,

Adam Caldwell-Waluk
Access Helicopters
Director of Maintenance
+1-778-350-4211

Initial contact: phone call from Adam 13 APR 2015.
Two bushings sent - 0.375 and 0.395 OD
Email confirms 0.395 correct.

Jeff Clark. 27 APR 2015

Matthew Willemsen

From: Jeff Clarke <jeff@aerodesign.ca>
Sent: February-08-12 2:56 PM
To: matt.willemsen@sloanhelicopters.com
Subject: RE: AS350 Extended Maintenance Step

Mail works, send it to us.

AERO Design Ltd.
2013 39th Ave NE
Calgary, AB
T2E 6R7

From: matt.willemsen@sloanhelicopters.com [mailto:matt.willemsen@sloanhelicopters.com]
Sent: February 8, 2012 1:20 PM
To: Jeff Clarke
Subject: Re: AS350 Extended Maintenance Step

Mail it? To you or them?
Sent on the TELUS Mobility network with BlackBerry

From: "Jeff Clarke" <jeff@aerodesign.ca>
Date: Wed, 8 Feb 2012 12:55:53 -0700
To: 'Matthew Willemsen'<matt.willemsen@sloanhelicopters.com>
Subject: RE: AS350 Extended Maintenance Step

That is what I thought. We will need a sample. They remember shooting it, but somehow the colour didn't end up on an invoice.

Jeff

From: Matthew Willemsen [mailto:matt.willemsen@sloanhelicopters.com]
Sent: February 8, 2012 9:29 AM
To: 'Jeff Clarke'
Subject: RE: AS350 Extended Maintenance Step

No I don't the only contact I had was with you, I did visit there shop so I could approve the sample. I can send them a sample for them to match, that would be the best I can do.

Matthew Willemsen PRM
Sloan Helicopters

From: Jeff Clarke [mailto:jeff@aerodesign.ca]
Sent: February-07-12 2:21 PM
To: 'Matthew Willemsen'
Subject: RE: AS350 Extended Maintenance Step

Matthew,

The step is setup for the LH side.

I have been through our records and talked to the powder coaters, we cannot find the colour code used for your basket. Do you have still have that information? Would be around February 2011 I believe.

Thank you,

Jeff Clarke
AERO Design Ltd.

From: Matthew Willemsen [mailto:matt.willemsen@sloanhelicopters.com]
Sent: February 7, 2012 12:46 PM
To: 'Jeff Clarke'
Subject: RE: AS350 Extended Maintenance Step

We had a look at the drawing and out aircraft, and it looks that will work very well. Attached is a PO. From the photographs it appears correct, but please note that our basket installation is on the Left Hand side of the aircraft.

Matthew Willemsen PRM
Sloan Helicopters

From: Jeff Clarke [mailto:jeff@aerodesign.ca]
Sent: February-07-12 7:50 AM
To: matt.willemsen@sloanhelicopters.com
Subject: AS350 Extended Maintenance Step

Matthew,

Further to your call and SMS finding report, I have had a chance to come up with a prototype for an extended maintenance step, pictures attached. The step sticks out the front end 19.375" from the centre of the forward beam. It locks into the keyways that are closer together on the beam and can be stowed under the basket on the other set of keyways. If you are interested I can look into getting it powdercoated to match your helicopter as we did with your basket.

I will call you later this morning to discuss this.

Regards,

Jeff Clarke, CET

AERO Design Ltd.
2013 39th Avneue NE
Calgary, Alberta, Canada
T2E 6R7

Phone: 403.250.8027
Fax: 403.250.8333

PURCHASE ORDER

Sloan Helicopters Ltd.

P.O. Box 251
Kinuso, Alberta T0G 1K0
(780) 849-4456 phone
1-866-281-6662 fax
Matt.Willemsen@sloanhelicopters.com

PAGE 1 of 1
P.O. NO. **2012-08-FKR**
DATE February 7, 2012

VENDOR AERO Design Ltd.
2013 39th Avneue NE
Calgary, Alberta, T2E 6R7
403.250.8027 phone
403.250.8333 fax

Contact Jeff Clarke, CET
Jeff Clarke <jeff@aerodesign.ca>

AIRCRAFT	REGISTRATION	SERIAL NUMBER
Eurocopter AS350B2	C-FFKR	4971

QTY	ITEM #	DESCRIPTION	UNIT PRICE	LINE TOTAL
1		Quick Release Maintenance Step (revisied design)		
1		Powder coat step "blue" to match aircraft		
			SUBTOTAL	
			SALES TAX	
			TOTAL	

1. Please send two copies of your invoice.

2. Please notify us immediately if you are unable to complete the order as specified.

3. Send all correspondence, <u>including work orders and copies of original certification statements and maintenance release tags</u> with your invoice to:

Sloan Helicopters Ltd.
P.O. Box 251
Kinuso, Alberta T0G 1K0
(780) 849-4456 phone
1-866-281-6662 fax

Matt Willemsen — Feb 7, 2012

Authorized by *Date*

SLOAN HELICOPTERS

Matthew Willemsen PRM
PO Box 251
Kinuso, Alberta
T0G 1K0

www.canadapost.ca 120503 01:45

www.postescanada.ca T5L 5H2

Canada 1 22

AERO Design Ltd.
2013 39th Ave NE
Calgary, AB
T2E 6R7

PURCHASE ORDER

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Contact Jeff Clarke, CET
Jeff Clarke <jeff@aerodesign.ca>

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Kinuso, Alberta T0G 1K0
(780) 849-4456 phone
1-866-281-6662 fax

Matt Willemsen — Feb 7, 2012

Authorized by *Date*

1.5 x price

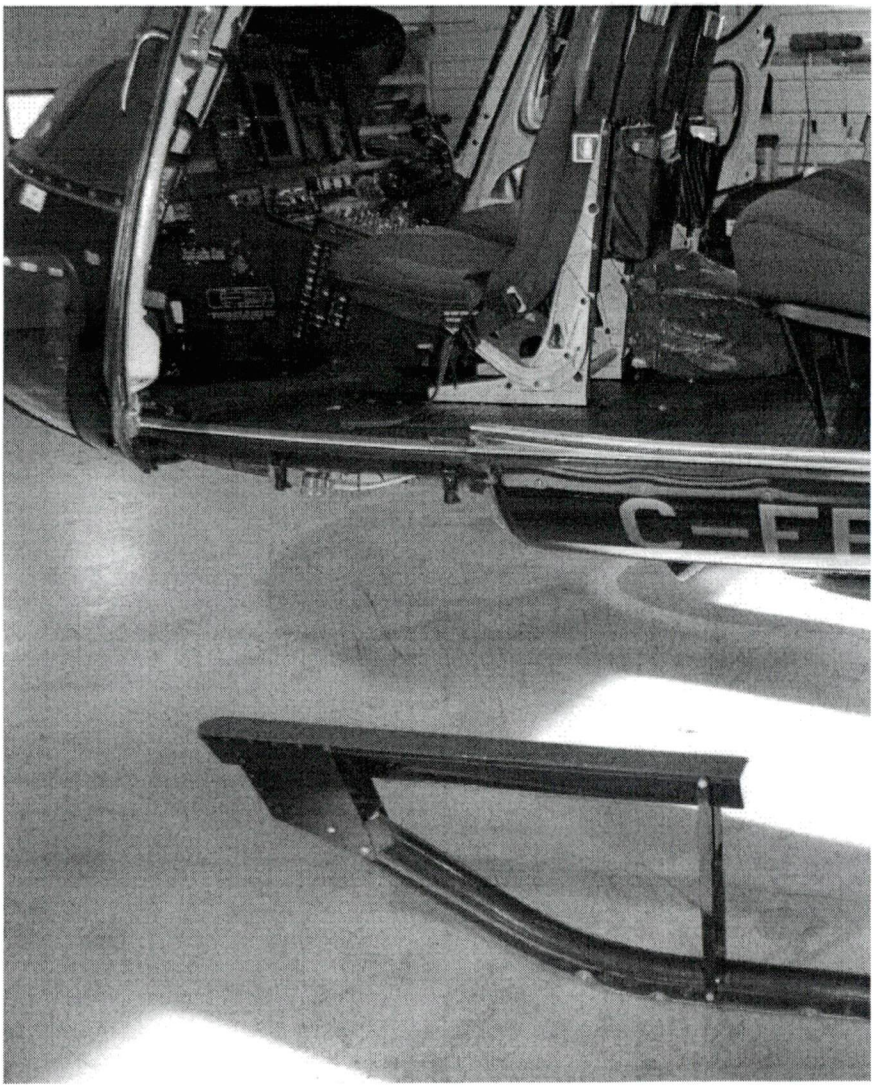
~~$60 RAL 5003 / sparkle silver R44~~

Steven Fahey

From: "Matthew Willemsen" <matt.willemsen@sloanhelicopters.com>
To: <steve@aerodesign.ca>
Sent: Wednesday, January 11, 2012 12:44 PM
Attach: 2011-8.pdf; 100_0119.JPG
Subject: Flight steps and baskets

Attached is a copy of our safety finding on this issue. I bet it's not as big an issue without the sliding door.

Matthew Willemsen PRM
Sloan Helicopters



Powder.

HAZARD/SMS FINDING

Date: 6 Dec 2011

Reference #: 2011-8
Completed by Management

Finding	**CORRECTIVE ACTION**
❑ Maintenance ☒ Operational **Risk Management Assessment #** 6 *(reference Risk Management Matrix on last page)* **Details:** With the basket removed on the A-star there has been two incidents of passengers missing the step. The basket was removed at the time. The flight step ends where the basket should be. **Identify Root Cause:** Poor design of the STC.	**SHORT TERM ACTION** Manufacture contacted to see if a different step is available when basket removed. There is not. Until further notice the basket will remain on when moving passengers. **LONG TERM ACTION** Sloan Helicopters is looking to create our own solution by creating a long step that will take the place of the basket. Estimate complete date for this would be spring of 2012.

_____

Manager Signature

❑ Contributors Notified

The following will be completed by the Accountable Executive:

Are the corrective action(s) or option(s) effective in addressing this finding?

Implementation Date(s):

If applicable, has staff been informed of the changes?

Note any additional feedback or evaluations.

_____

Signature

_____

Date

RISK MANAGEMENT MATRIX

Severity: Person, Financial, Public and Environment					Probability			
Grade	Personal Injury	Costs Financial	Public Damage	Environmental Damage	1	2	3	4
					Remote	Occurred in Industry	Occurred within our Company	Occurred 2 Times or More within our Company
1	Minor first aid injury.	Slight damage & downtime in hours.	Negligible effect.	<1 sq. meter contained. No impact.	1	2	3	4
2	Doctor visit injury; 1 day off.	Damage & downtime; 1-5 days.	Evacuation.	> 1 sq. meter spill on site or any spill off site; reportable release.	2	4	6	8
3	Doctor visit injury; >1 day off.	Damage & downtime; 5-10 days.	Injury or exposure.	>5 sq. meter spill on land, any spill impacting groundwater, waterway.	3	6	9	12
4	Life threatening.	Damage & downtime >10 days.	Life threatening.	Any spill >10 sq. meter impacting waterway, or groundwater.	4	8	12	16

Legend	High Risk (12-16) Immediate Corrective Actions. Hazard controls.	Moderate Risk (6-9) Place Hazard controls to bring to an acceptable level.	Low and Acceptable (1-4)

_____ Risk Management Assessment #

Jeff Clarke

From: Jeff Clarke [jeff@aerodesign.ca]

Sent: January 2, 2013 8:50 AM

To: 'Staal, Jack'

Subject: C-12-1066 - AS350 Steps Update

Jack,

I have uploaded the last of the documents but I cannot submit for approval with TC as the signatory, which has not changed. Please approve/close the project.

Regards,

Jeff Clarke, CET

AERO Design Ltd.
2013 39th Avenue NE
Calgary, Alberta, Canada
T2E 6R7

Phone: 403.250.8027
Fax: 403.250.8333

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82715	Short Cabin Step Assembly	1
82717	Long Cabin Step Assembly	0
82718	Commuter Cabin Step Assembly	1
82723	Bracket Fabrication	1
82733	Short Cabin Step Parts Fabrication	1
82734	Cabin Step Parts Fabrication	0
82736	Commuter Cabin Step Parts Fabrication	0
82760	Commuter Step Assembly	0
82765	Bracket Fabrication	1
82780	Bracket (DART Long)	0
82781	Cap (DART Long)	0
82782	Bracket (DART Short)	0
82783	Cap (DART Short)	0
82784	Cap (Old Extrusion, DART Short)	0
82785	Bracket (Old Extrusion, DART Short)	0
82786	Cap (Old Extrusion, DART Long)	0
ENGINEERING DOCUMENTS		
ER827.02	Engineering Report	0
ER827.03	Engineering Report	1

APPROVAL

Transport Canada
E. BURGOIN
DAR 290M
APPROVED
By
Appr'l No. SH09-38
Appr'l Date 07 AUG 2009
Issue No. 3
Issue Date 30 NOV 2010
THIS DCL APPROVED
19 DEC 2012

ORIGINAL DATE:
20 October, 2008
REVISION DATE:
29 November 2012

AERO DESIGN LTD.
2013 – 39th Ave NE, Calgary, Alberta, T2E 6R7
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www.aerodesign.ca

SHEET 1 OF 1

Eurocopter AS350 & 355 Series Fixed Cabin Step Fabrication

DCL827-13

Rev. **5**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82716	Step Assembly	0
82722	Step End Fabrication	0
82711	Extended Step Assembly	0 ✓
82720	Step Bracket Fabrication	1 ✓
ENGINEERING DOCUMENTS		
ER827.02	Engineering Report	0

APPROVAL:

Transport Canada
E. BURGOIN
DAR 290M
APPROVED
By
Appr'l No. SH09-38
Appr'l Date 07 AUG 2009
Issue No. 3
Issue Date 30 NOV 2010

THIS DCL APPROVED
19 DEC 2012

ORIGINAL DATE:
31 October, 2008
REVISION DATE:
04 December 2012

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Ph. (403) 250-8027
Fax. (403) 250-8333
www.aerodesign.ca

SHEET 1 OF 1

Eurocopter AS350 & 355 Series Quick Release Maintenance Step Fabrication

DCL827-11

Rev. **3**

Transport Canada / Transports Canada

MINISTERIAL DELEGATE STATEMENT OF COMPLIANCE WITH THE CERTIFICATION BASIS

DÉLÉGUÉ MINISTÉRIEL CONSTAT DE CONFORMITÉ AVEC LA BASE DE CERTIFICATION

1. Reference No. / N° de référence	2. Applicant Name / Nom de demandeur
NAPA File C-12-1066 Aero Design Project # 827-3	Aero Design Ltd.

Part 1: Identification of Aeronautical Product
Partie 1 : Identification des produits aéronautiques

3. Applicable Design Approval Document No. / N° du document d'approbation de la conception applicable

H-83, H-87

4. Model No. / N° de modèle	5. Make / Marque
AS350 all models, AS355 all models	Eurocopter

6. Type (aircraft, engine, propeller, appliance, part) / Type (aéronef, moteur hélice, appareillage, pièce)

Aircraft

Part 2: Substantiating Reports and Data
Partie 2 : Rapports et des données pertinentes

7. Number / Numéro	8. Title / Titre
DCL827-3 Revision 6	Document Control List, and all documents referenced therein.
DCL827-13 Revision 5	Document Control List, and all documents referenced therein.

9. Purpose of Finding of Compliance / But de la constat de conformité

☐ New approval:
- ☐ Supplemental Type Certificate
- ☐ Supplemental Type Certificate-Limited
- ☐ Repair Design Certificate
- ☐ Other:

Revisions to update configurations.

☐ Revise existing approval # SH09-38

No — The revised data requires the revision of the approval document.

Yes — The revised data is within the scope of the accepted Certification Plan.

10. Applicable Elements of Certification Basis / Éléments applicables de la base de certification

☒ Certification Plan: CP827

☒ Letter of exention of delegation, dated: 07 August 2009

Part 3: Ministerial Delegate Finding of Compliance with the Certification Basis
Partie 3 : Délégué ministériel constat de conformité avec la base de certification

Under the authority vested in me by the Minister under subsection 4.3(1) of the *Aeronautics Act*, I hereby find that the type design of the aeronautical product is in compliance with the certification basis as demonstrated by the applicant's substantiating reports and data to the best of my knowledge.

En vertu des pouvoirs qui m'ont été conférés par le ministre conformément au paragraphe 4.3(1) de la *Loi sur l'Aéronautique*, j'estime que, à ma connaissance, la définition de type du produit aéronautique est conforme à sa base de certification tel qu'il a été démontré par les rapports et les données pertinentes fournis par le demandeur.

11. Signature of Delegate(s) / Signature des délégués	12. Name / Nom	13. Delegate No. / N° de délégué	14. Date (yyyy-mm-dd) / Date (aaaa-mm-jj)
	E. Burgoin, Aero Design Ltd.	DAR 290M	2012-12-14

Canada

Transport Canada / Transports Canada

MINISTERIAL DELEGATE STATEMENT OF COMPLIANCE WITH THE CERTIFICATION BASIS

DÉLÉGUÉ MINISTÉRIEL CONSTAT DE CONFORMITÉ AVEC LA BASE DE CERTIFICATION

Block 7 (continued from sheet 1)

Document Number	Revision	Title	Comment
ER827.03	1	Engineering Report	
82715	1	Short Step Assembly	
82718	1	Commuter Step Assembly	
82723	1	Long Step Bracket Fabrication	
82733	1	Short Step Bracket Fabrication	
82770	0	Short Cabin Step Installation – DART Conversion	
82771	0	Long Cabin Step Installation – DART Conversion	
82772	0	Short Cabin Step Installation – DART Conversion (Old Extrusion)	
82773	0	Long Cabin Step Installation – DART Conversion (Old Extrusion)	
82780	0	Bracket Fabrication (DART Long)	
82781	0	Cap Fabrication (DART Long)	
82782	0	Bracket Fabrication (DART Short)	
82783	0	Cap Fabrication (DART Short)	
82784	0	Cap Fabrication (Old Extrusion, DART Short)	
82785	0	Bracket Fabrication (Old Extrusion, DART Short)	
82786	0	Cap Fabrication (Old Extrusion, DART Long)	

Documents listed below this line (if any) cannot be approved by the delegate:

ICA827.92	3	Instructions for Continued Airworthiness

Transport Canada / Transports Canada

MINISTERIAL DELEGATE STATEMENT OF COMPLIANCE WITH THE CERTIFICATION BASIS

DÉLÉGUÉ MINISTÉRIEL CONSTAT DE CONFORMITÉ AVEC LA BASE DE CERTIFICATION

1. Reference No. / N° de référence	2. Applicant Name / Nom de demandeur
NAPA File C-12-1066 Aero Design Project # 827-1	Aero Design Ltd.

Part 1: Identification of Aeronautical Product
Partie 1 : Identification des produits aéronautiques

3. Applicable Design Approval Document No. / N° du document d'approbation de la conception applicable

H-83, H-87

4. Model No. / N° de modèle	5. Make / Marque
AS350 all models, AS355 all models	Eurocopter

6. Type (aircraft, engine, propeller, appliance, part) / Type (aéronef, moteur hélice, appareillage, pièce)

Aircraft

Part 2: Substantiating Reports and Data
Partie 2 : Rapports et des données pertinentes

7. Number / Numéro	8. Title / Titre
DCL827-1 Revision 5	Document Control List, and all documents referenced therein.
DCL827-11 Revision 3	Document Control List, and all documents referenced therein.

9. Purpose of Finding of Compliance / But de la constat de conformité

☐ New approval:
- ☐ Supplemental Type Certificate
- ☐ Supplemental Type Certificate-Limited
- ☐ Repair Design Certificate
- ☐ Other:

Revision to update configurations.

☐ Revise existing approval # SH09-38

No — The revised data requires the revision of the approval document.

Yes — The revised data is within the scope of the accepted Certification Plan.

10. Applicable Elements of Certification Basis / Éléments applicables de la base de certification

☒ Certification Plan: CP827

☒ Letter of exention of delegation, dated: 07 August 2009

Part 3: Ministerial Delegate Finding of Compliance with the Certification Basis
Partie 3 : Délégué ministériel constat de conformité avec la base de certification

Under the authority vested in me by the Minister under subsection 4.3(1) of the *Aeronautics Act*, I hereby find that the type design of the aeronautical product is in compliance with the certification basis as demonstrated by the applicant's substantiating reports and data to the best of my knowledge.

En vertu des pouvoirs qui m'ont été conférés par le ministre conformément au paragraphe 4.3(1) de la *Loi sur l'Aéronautique*, j'estime que, à ma connaissance, la définition de type du produit aéronautique est conforme à sa base de certification tel qu'il a été démontré par les rapports et les données pertinentes fournis par le demandeur.

11. Signature of Delegate(s) / Signature des délégués	12. Name / Nom	13. Delegate No. / N° de délégué	14. Date (yyyy-mm-dd) / Date (aaaa-mm-jj)
	E. Burgoin, Aero Design Ltd.	DAR 290M	2012-12-14

26-0757 (1004-01)

Canada

Transport Canada Transports Canada

MINISTERIAL DELEGATE STATEMENT OF COMPLIANCE WITH THE CERTIFICATION BASIS

DÉLÉGUÉ MINISTÉRIEL CONSTAT DE CONFORMITÉ AVEC LA BASE DE CERTIFICATION

Block 7 (continued from sheet 1)

Document Number	Revision	Title	Comment
82702	1	Extended Maintenance Step Installation	
82711	0	Extended Maintenance Step Assembly	
82720	1	Step Bracket Fabrication	

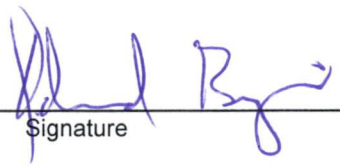
Documents listed below this line (if any) cannot be approved by the delegate:

FMS827.90	3	Flight Manual Supplement
ICA827.91	4	Instructions for Continued Airworthiness

DECLARATION OF CONFORMITY WITH THE CERTIFICATION BASIS

In accordance with Canadian Aviation Regulations Subpart 521, I hereby declare that the design of the Quick Release Maintenance Step, Maintenance Peg Step, and Fixed Cabin Steps, as detailed in the data approved by Transport Canada approval SH09-38, Issue 3, has been demonstrated to conform to the best of my knowledge to the basis of certification established by the Minister for that approval in file C-12-1066.

AERO Design Ltd.

per: 
Signature

E. Burgoin	Consultant	14 December 2012
Print Name	Title	Date

Dubyk, Debbie

From: Dubyk, Debbie
Sent: Wednesday, December 19, 2012 3:54 PM
To: Ted Burgoin
Cc: Jeff Clarke
Subject: C-12-1066; SH09-38 - ISSUE 3 - STEP INSTALLATIONS

Importance: High

Ted/Jeff:
Please be advise that I have uploaded the following documents to NAPA Project C-12-1066 and you have been delegate access to view them thru the NDWL.

1. FMS827.90 – TCCA Approved 2012 December 19;
2. MSI 53; for ICA827.92 Rev. 3; TCCA Accepted by Jack Staal and dated 19 December 2012;
3. MSI 53 Review - for ICA827.91 Rev. 4; TCCA Accepted by Jack Staal and dated 19 December 2012.


FMS827.90 - TCCA APPROVED.pdf


MSI 53 Rev 3 C-12-1066.pdf


MSI Rev 4 C-12-1066.pdf

The original signed documents will be sent to you in the mail.

Thanks

Debbie

Debbie Dubyk
Operational Support Assistant /Assistante soutien opérationnel
Engineering \ Ingénierie
Prairie & Northern Region \ Région des Prairies et du Nord
Edmonton Operations | Edmonton opérations
Telephone / télephone 780-495-7412
Facsimile / télécopieur 780-495-7963 / TTY/ATS 613-990-4500
E-mail / courier electronique / debbie.dubyk@tc.gc.ca
Transport Canada / Transports Canada - RAED
1100 Canada Place / 1100 Place du Canada
9700 - Jasper Avenue / 9700 - avenue Jasper
Edmonton, Alberta T5J 4E6
Government of Canada / Gouvernement du Canada
To provide feedback to TCCA, use CAIRS.
See: http://www.tc.gc.ca/CivilAviation/ManagementServices/QA/cairs.htm
Pour tout commentaire à TCAC, utilizer CAIRS.
Voir: http://www.tc.gc.ca/AviationCivile/ServicesdeGestion/AQ/ssqac.htm

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Fixed Cabin Step on Eurocopter AS350 & AS355 Series**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-20**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 827.92)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82705, 82706, 82709, 82750, 82751, 82752, 82770, 82771, 82772, 82773**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA827.92, Rev. 3)
A527.2 (b) Practical arrangement *(b)* The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions.		
A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 thru 25-6
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-8
A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections *(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment *(e)* Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc *(f)* All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-9
A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Section 4

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** November 30, 2012

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: J. STAAL **Phone #** 780-495-5227 **Email:** jack.staal@tc.gc.ca **Mail Routing Symbol:** RAK 1

Signature: _____ **Date:** 19 Dec 2012 **NAPA Number** C-12-1066

Rev 3 DAR Rev 4

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Quick Release Maintenance Step on Eurocopter AS350 & AS355 Series**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-20**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 827.91)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82701, 82702**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA827.91, Rev. 4)
A527.2 (b) Practical arrangement *(b)* The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions.		
A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 and 25-2
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-3
A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections *(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment *(e)* Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc *(f)* All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-4
A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Chapter 4 ✓

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** December 04, 2012

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: J. STAAL **Phone #** 780-495-5227 **Email:** jack.staal@tc.gc.ca **Mail Routing Symbol:** RAX 1

Signature: _____ **Date:** 19 Dec 2012 **NAPA Number** _____

Rev 4

C-12-1066

Jeff Clarke

From: Jeff Clarke [jeff@aerodesign.ca]
Sent: December 19, 2012 11:53 AM
To: 'Staal, Jack'
Subject: RE: C-12-1066 - AS350 Steps - Configuration Update

Jack,

I have removed the stamps and added the pre-flight check to the FMS.

MSI 53 for ICA827.92 says "Rev. 3 see rev. 4" at the bottom. ICA827.92 is at Rev. 3, ICA827.91 is at Rev. 4 as noted on its MSI 53.

Thanks,
Jeff

From: Staal, Jack [mailto:Jack.Staal@tc.gc.ca]
Sent: December 19, 2012 11:09 AM
To: 'Jeff Clarke'
Subject: RE: C-12-1066 - AS350 Steps - Configuration Update

Jeff,

MSI 53's attached.

The FMS should be restamped since revised. If you provide a clean unstamped copy I will get that done. Since the FMS is being restamped do you want to add the preflight check note, ref recent 429 steps.

Sincerely,
JAck

From: Jeff Clarke [mailto:jeff@aerodesign.ca]
Sent: Friday, December 14, 2012 11:56 AM
To: Staal, Jack
Subject: C-12-1066 - AS350 Steps - Configuration Update

Jack,

I have added some new and revised parts that are encompassed by the basic configurations on STC SH09-38. Since there are no new configurations, and the STC states "or later approved revision" of the documents, we will not be revising the approval. Ted has delegation and an extension of delegation on file for the original compliance program, which remains applicable. The changes are:
1) Addition of an extended quick release maintenance step – when the long cargo basket is removed there is a gap between the short step and the forward cross tube that some operators would like to have filled for better access to the aft cabin. The maintenance step is extended forward to fill the gap.
2) Change length of short fixed step – the new extra large ski basket interferes with the short step, so the step is shortened by 1.88".
3) Addition of DART step modifications – many operators already have DART steps installed and do not want the additional cost of purchasing our steps to be compatible with our baskets. We provide the parts to modify the DART steps to be compatible with our baskets, which makes the steps similar to our fixed step configurations.

On the flight manual supplement for the quick release maintenance step, the approved section has not changed so I have left the original stamp on the cover for the new revision (attached). If this is not acceptable I will provide a clean copy for a new stamp. The change is to add the weight and balance for

the new extended step.

Attached are the document control lists so you can see what has changed, the NAPA file I see shows all of the original data with no dates so it would be hard to track down the things I have put in. Ted will stamp/sign the DCLs.

Please provide acceptance of the FMS, ICA827.91 at rev. 4 and ICA827.92 at rev. 3 (ICA and MSI 53s in NAPA), and I will have Ted sign off on the Statement of Compliance, Declaration of Conformity and DCLs.

Thank you.

Jeff Clarke, CET

AERO Design Ltd.
2013 39th Avenue NE
Calgary, Alberta, Canada
T2E 6R7

Phone: 403.250.8027
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AS350 & AS355 SERIES HELICOPTERS

FLIGHT MANUAL SUPPLEMENT
for the
INSTALLATION of the AERO DESIGN QUICK RELEASE MAINTENANCE STEP

TCCA Supplemental Type Certificate No. SH09-38
FAA Supplemental Type Certificate No. SR02770NY

Sections I, II, III, IV, and V of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section II, Limitations, is mandatory. Section VI and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.



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Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	By
0	4 Aug 2009	None		
1	5 Jan 2010	1, 2, 4-8		
2	16 June 2010	1, 2, 4-7		
3	04 Dec 2012	all		

I GENERAL

No change from basic Approved Flight Manual.

II LIMITATIONS

No change from basic Approved Flight Manual.

III EMERGENCY PROCEDURES

No change from basic Approved Flight Manual.

IV NORMAL PROCEDURES

1. Pre-flight inspections:
   a) Ensure the step is locked in postion on the beams. Pull up on the forward end of the step to check.

V PERFORMANCE

No change from basic Approved Flight Manual.

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VI INSTALLATION / REMOVAL INSTRUCTIONS

The attachment provisions are installed in accordance with Supplemental Type Certificate SH08-16. The maintenance step is installed in accordance with drawing 82701. The extended maintenance step is installed in accordance with drawing 82702.

There are three configurations approved for flight:
1) Step in the upper (normal) position or lower (stowed) position.
2) Step in the lower (stowed) position with a cargo basket installed.
3) Step removed, leaving the attachment provisions in place.

Logbook entry indicating installation or removal of step and which weight and balance amendment is in effect is required when step is installed or removed.

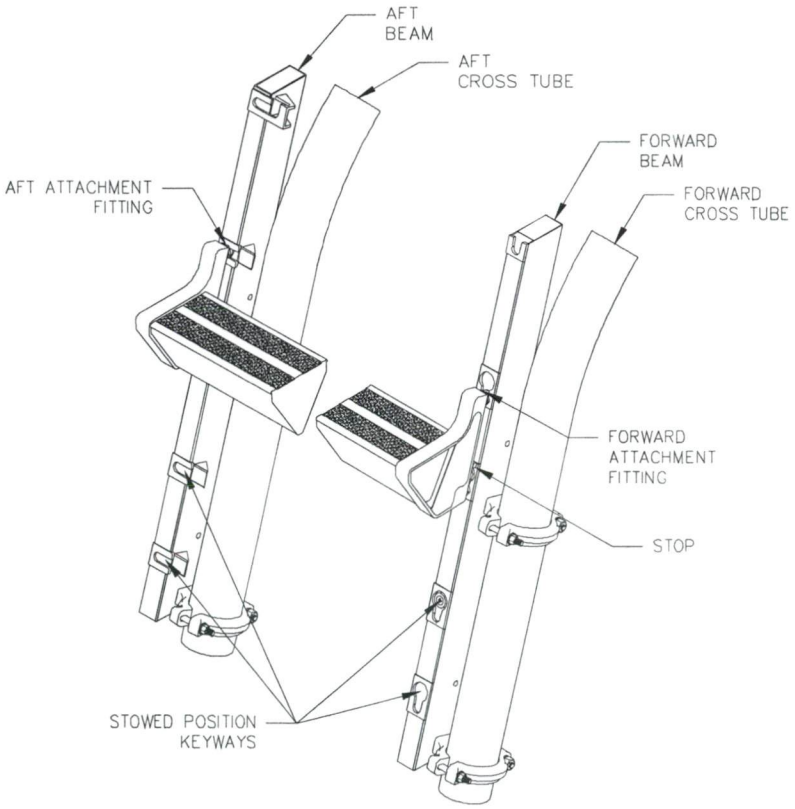


Figure 1 – Step Attachment Features

1. Installation - Refer to Figure 1.

   a) Slide step aft attachments fittings into keyways in aft beam.

   b) At forward end of step, lift step until lower attachment fitting hits stop.

   c) Push step attachment fittings into keyways and slide down until locked.

2. Removal - Refer to Figure 1.

   a) Pull knob on forward beam that is retaining step and lift step until forward attachment fittings are free of keyways.

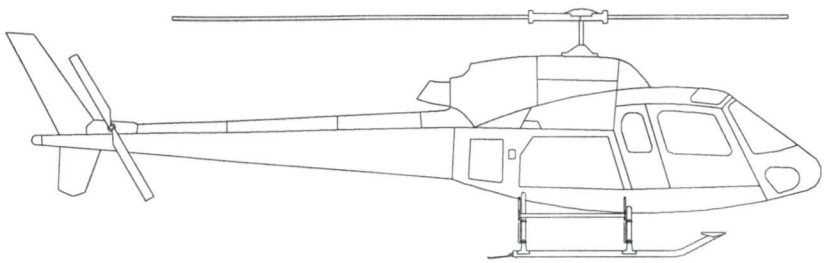
   b) Slide step forward until free of keyways on aft beam.

VII WEIGHT AND BALANCE

1. MAINTENANCE STEP 82701.

The following weight and balance is for the quick release maintenance step installed in accordance with drawing 82701. Upper (normal) and lower (stowed) positions are provided, either position is approved for flight.

Weight and balance is for Maintenance Step only. Refer to Flight Manual Supplement FMS764.91 for weight and balance for mounting provisions.



Quick Release Maintenance Step

Standard Units

Provisions Configuration	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
Right Hand						
High	Step	4.0	136.0	544.0	37.6	150.4
	Step (stowed)	4.0	136.0	544.0	40.3	161.2
Low	Step	4.0	136.0	544.0	38.3	153.2
	Step (stowed)	4.0	136.0	544.0	41.1	164.4
Eurocopter Pod	Step	4.0	136.0	544.0	40.3	161.2
Compatible	Step (stowed)	4.0	136.0	544.0	43.1	172.4
Left Hand						
High	Step	4.0	136.0	544.0	-37.6	-150.4
	Step (stowed)	4.0	136.0	544.0	-40.3	-161.2
Low	Step	4.0	136.0	544.0	-38.3	-153.2
	Step (stowed)	4.0	136.0	544.0	-41.1	-164.4
Eurocopter Pod	Step	4.0	136.0	544.0	-40.3	-161.2
Compatible	Step (stowed)	4.0	136.0	544.0	-43.1	-172.4

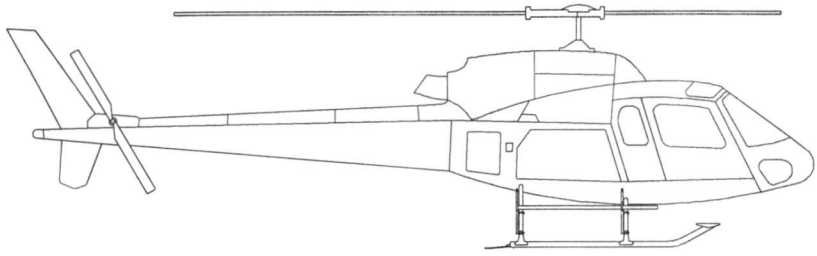
Metric Units

Provisions Configuration	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		Kg	mm	mm-Kg	mm	mm-Kg
Right Hand						
High	Step	1.8	3454	6252	955	1729
	Step (stowed)	1.8	3454	6252	1024	1853
Low	Step	1.8	3454	6252	973	1751
	Step (stowed)	1.8	3454	6252	1044	1890
Eurocopter Pod	Step	1.8	3454	6252	1024	1853
Compatible	Step (stowed)	1.8	3454	6252	1095	1981
Left Hand						
High	Step	1.8	3454	6252	-955	-1729
	Step (stowed)	1.8	3454	6252	-1024	-1853
Low	Step	1.8	3454	6252	-973	-1751
	Step (stowed)	1.8	3454	6252	-1044	-1890
Eurocopter Pod	Step	1.8	3454	6252	-1024	-1853
Compatible	Step (stowed)	1.8	3454	6252	-1095	-1981

2. EXTENDED MAINTENANCE STEP 82702.

The following weight and balance is for the extended quick release maintenance step installed in accordance with drawing 82702. Upper (normal) and lower (stowed) positions are provided, either position is approved for flight.

Weight and balance is for Maintenance Step only. Refer to Flight Manual Supplement FMS764.91 for weight and balance for mounting provisions.



Extended Quick Release Maintenance Step

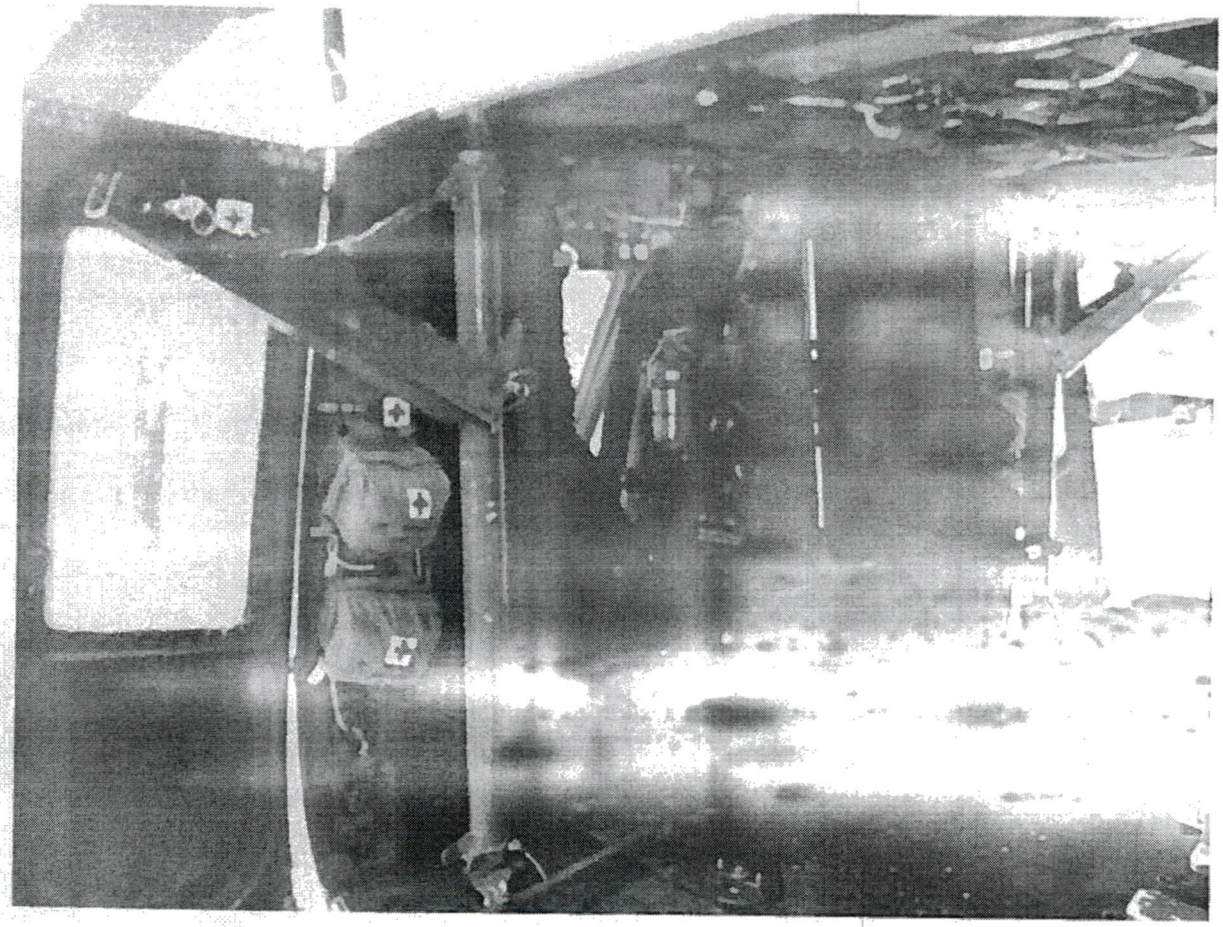
Standard Units

Provisions Configuration	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
Right Hand						
High	Step	9.0	126.5	1138.5	37.2	334.8
	Step (stowed)	9.0	126.5	1138.5	39.9	359.1
Low	Step	9.0	126.5	1138.5	37.9	341.1
	Step (stowed)	9.0	126.5	1138.5	40.7	366.3
Eurocopter Pod Compatible	Step	9.0	126.5	1138.5	39.9	359.1
	Step (stowed)	9.0	126.5	1138.5	42.7	384.3
Left Hand						
High	Step	9.0	126.5	1138.5	-37.2	-334.8
	Step (stowed)	9.0	126.5	1138.5	-39.9	-359.1
Low	Step	9.0	126.5	1138.5	-37.9	-341.1
	Step (stowed)	9.0	126.5	1138.5	-40.7	-366.3
Eurocopter Pod Compatible	Step	9.0	126.5	1138.5	-39.9	-359.1
	Step (stowed)	9.0	126.5	1138.5	-42.7	-384.3

Metric Units

Provisions Configuration	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		Kg	mm	mm-Kg	mm	mm-Kg
Right Hand						
High	Step	4.1	3213	13085	945	3848
	Step (stowed)	4.1	3213	13085	1013	4127
Low	Step	4.1	3213	13085	963	3920
	Step (stowed)	4.1	3213	13085	1034	4210
Eurocopter Pod	Step	4.1	3213	13085	1013	4127
Compatible	Step (stowed)	4.1	3213	13085	1085	4417
Left Hand						
High	Step	4.1	3213	13085	-945	-3848
	Step (stowed)	4.1	3213	13085	-1013	-4127
Low	Step	4.1	3213	13085	-963	-3920
	Step (stowed)	4.1	3213	13085	-1034	-4210
Eurocopter Pod	Step	4.1	3213	13085	-1013	-4127
Compatible	Step (stowed)	4.1	3213	13085	-1085	-4417

4 MAN CONFIGURATION



INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 827.91

EUROCOPTER AS350 & AS355 SERIES

QUICK RELEASE MAINTENANCE STEP

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release Maintenance Step installed in accordance with AERO Design Ltd. Document Control List DCL827-1, Revision 5, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 4
Date: 04 December, 2012

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
0			Original Issue
1	23 July 2009		
2	05 January 2010		
3	28 June 2010		
4	04 Dec 2012		

LIST OF EFFECTIVE PAGES

List of Revisions

Revision 0 (Original Issue)	20 October, 2008
Revision 1	23 July, 2009
Revision 2	05 January 2010
Revision 3	28 June 2010
Revision 4	04 December 2012

List of Effective Pages

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Cover	1	4
Revision Record/List of Effective Pages	2	4
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04-00-00	6	4
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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Maintenance Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Maintenance Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

Quick Release Cargo Basket Installation:

The Quick Release Maintenance Step must be installed in the lower (stowed) position prior to installation of the AERO Design Ltd. Cargo Baskets in accordance with STC SH08-16.

The Quick Release Maintenance Step cannot be stowed with the extra large AERO Design Ltd. Cargo Basket, configuration 940, installed.

0-5 GENERAL DESCRIPTION

The Quick Release Maintenance Step installation consists of a step assembly which is attached to quick release mounting provisions installed on the helicopter. These mounting provisions are capable of mounting various equipment including cargo baskets.

The step itself consists of an aluminum extrusion attached to brackets on the ends with fittings that lock into the quick release mechanism.

Two positions are provided: upper for use in maintenance activities and lower for stowing under a cargo basket.

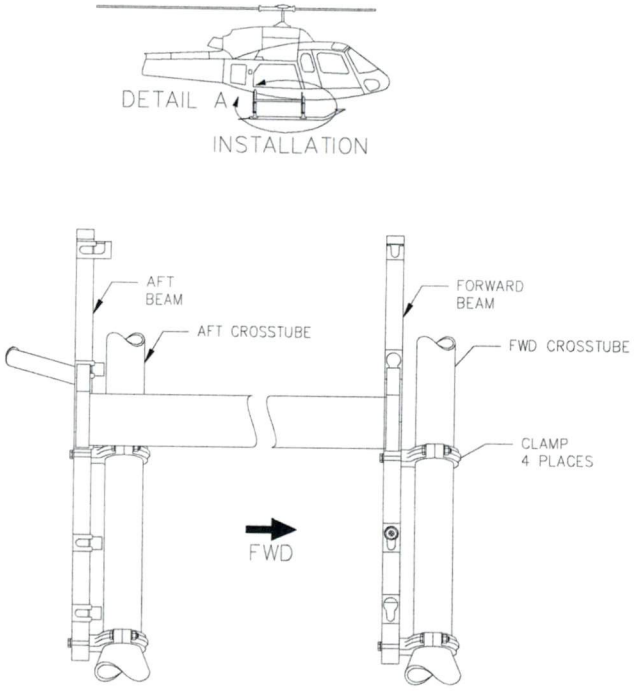


Figure 0-1 – AS350 Quick Release Maintenance Step Installation

The Extended Quick Release Maintenance Step is used to fill the gap between the forward cross tube and the short fixed step when the cargo basket is removed. The installation is identical to the standard Quick Release Maintenance Step.

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under Secs. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Quick Release Maintenance Step.

CHAPTER 5 – INSPECTION REQUIREMENTS

Refer to ICA764.90 for inspection requirements for the Quick Release Mounting Provisions not included below.

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Quick Release Maintenance Step.

Daily Inspection

1. Inspection Area: Step

   a) Inspect the step attachment to the beams for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.

100 Hour or Annual Inspection

Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for inspection of mounting provisions.

1. Inspection Area: Step

   a) Visually inspect welds attaching end brackets to step extrusion for cracks, corrosion or other damage.

   b) Visually inspect step for damage.

   c) Visually inspect lugs attaching the step to the beams for security and damage.

Special Inspections

1. Following a hard landing inspect the Quick Release Maintenance Step installation in accordance with the 100 hour or annual inspection listed above.
2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for further limits and repair instructions.

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Step Assembly

Part	Type of Damage	Max. Allowable	Repair
Step End Bracket	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Centre Step Section	Corrosion	2" x 2" x 0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long	Blend up to 0.010" deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" max at middle of step	None

2. Steel Beams

Part	Type of Damage	Max. Allowable	Repair
Steel Beam	Corrosion	0.015" deep	Blend up to 0.015" deep with scotchbrite.
	Scratches / Nicks	0.015" deep x 0.125" wide	Blend up to 0.015" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Elongation of Keyway	See figure 5-1 and 5-2	None
	Widening of slots	15/32" (0.469) diameter maximum (check with a 15/32" drill)	None

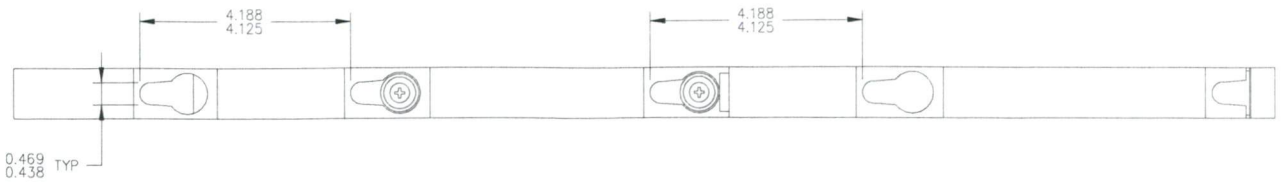


Figure 5-1 – Critical Keyway Dimensions (Forward Beam)

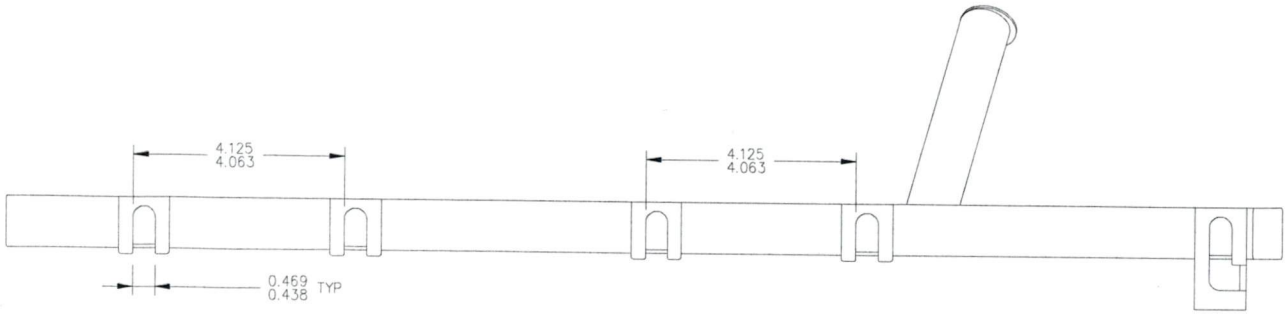


Figure 5-2 – Critical Keyway Dimensions (Aft Beam)

3. Step Welds

Cracks up to 0.25" long may be repaired as follows:

a) Clean area of paint.

b) Grind away weld in area of crack.

c) T.I.G. weld per MIL-STD-2219 Class "C" using ER4043 filler rod. Do not grind flush.

d) Touch up paint as noted in section 5-3.

4. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

¼-28 insert: 3591-4CN375

3/8-24 insert: 3591-6CN563

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint. The tread area has two 1" strips of 3M Safety-Walk grip tape. If the grip tape is damaged, replace with equivalent grip tape, or apply Randolph X1567 Wingwalk grip paint or equivalent to the top surface.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Quick Release Maintenance Step Installation may be applied to the right and/or left side of the helicopter. Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for installation, inspection, repair and removal instructions for the mounting provisions.

25-1 STEP INSTALLATION

Refer to Figure 25-1.

1. Set aft attachment fittings into keyways in aft beam.
2. At forward beam, lift step until lower attachment fitting hits stop.
3. Push forward attachment fittings into keyways and slide step down until locked.

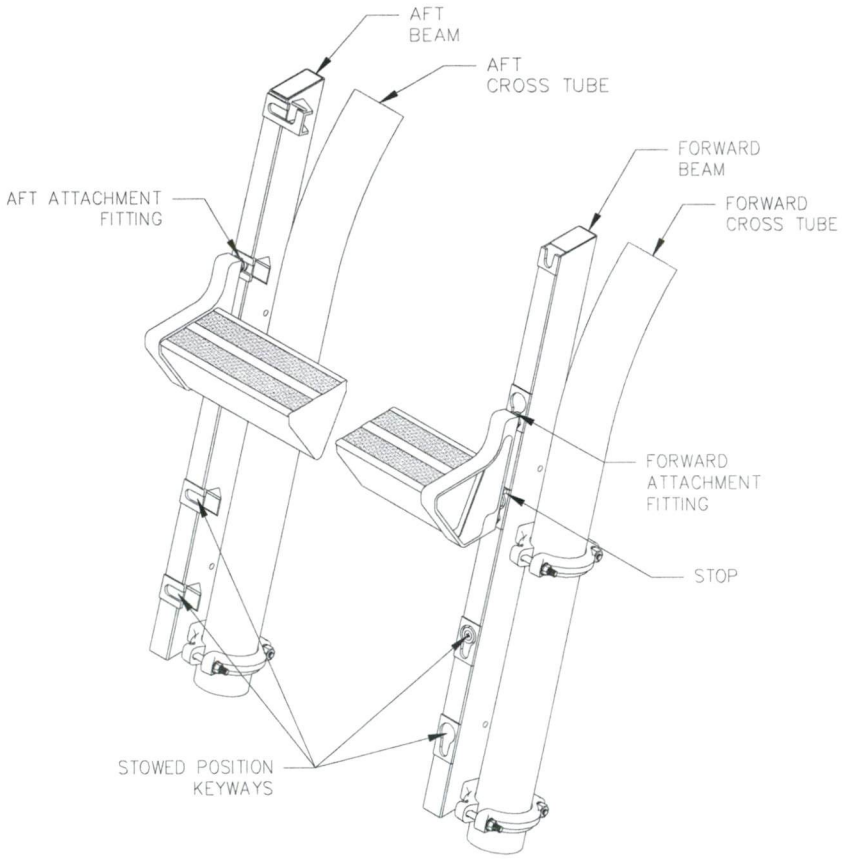


Figure 25-1 – Step Attachment

25-2 STEP REMOVAL

Refer to Figure 25-1.

1. Pull knob at bottom end of forward beam and lift step until forward attachment fittings are free of keyways.
2. Slide step forward until free of keyways on aft beam.

25-3 WEIGHT AND BALANCE

Different weight and balance configurations are required for the pilot. The first is the installation of Mounting Provisions only. The second is Provisions and Step in the upper position. The third is Provisions and Step in the lower (stowed) position.

Standard Quick Release Maintenance Step

Standard

P/N *	Description	Weight	Longitudinal		Lateral **	
			arm	moment	arm	moment
	Low Provisions Configuration	lb	in	in-lb	in	in-lb
78602-01-XX	Low Provisions Installation	6.4	135.6	867.5	37.2	238.0
82716-01	Maintenance Step	4.0	136.0	544.0	38.3	153.2
82701-01	**Step Installation**	**10.4**	**135.7**	**1411.5**	**37.6**	**391.2**
78602-01-XX	Low Provisions Installation	6.4	135.6	867.5	37.2	238.0
82716-01	Maintenance Step (stowed)	4.0	136.0	544.0	41.1	164.4
82701-01	**Step Installation (stowed)**	**10.4**	**135.6**	**1411.5**	**38.7**	**402.4**
	High Provisions Configuration					
78602-02-XX	High Provisions Installation	6.4	135.6	867.5	36.5	233.8
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	37.6	150.4
82701-01	**Step Installation**	**10.4**	**135.6**	**1411.5**	**36.9**	**384.2**
78602-02-XX	High Provisions Installation	6.4	135.6	867.5	36.5	233.8
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	40.3	161.2
82701-01	**Step Installation (stowed)**	**10.4**	**135.6**	**1411.5**	**38.0**	**395.0**
	Eurocopter Pod Compatible Configuration					
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	6.8	135.4	921.0	38.8	263.6
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	40.3	161.2
82701-01	**Step Installation**	**10.8**	**135.6**	**1465.0**	**39.3**	**424.8**
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	6.8	135.4	921.0	38.8	263.6
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	43.1	172.4
82701-01	**Step Installation (stowed)**	**10.8**	**135.6**	**1465.0**	**40.4**	**436.0**

* -XX indicates side. Right side is -01, Left side is -02.

**Lateral arm is negative for left side installation.

Table 25-1 – Quick Release Maintenance Step Weight and Balance

Standard Quick Release Maintenance Step

Metric

P/N *	Description	Weight	Longitudinal		Lateral **	
	Low Provisions Configuration	kg	arm mm	moment mm-kg	arm mm	moment mm-kg
78602-01-XX	Low Provisions Installation	2.9	3443	9971	945	2735
82716-01	Maintenance Step	1.8	3454	6252	973	1751
82701-01	**Step Installation**	**4.7**	**3447**	**16223**	**955**	**4496**
78602-01-XX	Low Provisions Installation	2.9	3443	9971	945	2735
82716-01	Maintenance Step (stowed)	1.8	3454	6252	1044	1890
82701-01	**Step Installation (stowed)**	**4.7**	**3447**	**16223**	**983**	**4625**
	High Provisions Configuration					
78602-02-XX	High Provisions Installation	2.9	3443	9971	928	2688
82716-01	Quick Release Maintenance Step	1.8	3454	6252	955	1729
82701-01	**Step Installation**	**4.7**	**3447**	**16223**	**938**	**4416**
78602-02-XX	High Provisions Installation	2.9	3443	9971	928	2688
82716-01	Quick Release Maintenance Step	1.8	3454	6252	1024	1853
82701-01	**Step Installation (stowed)**	**4.7**	**3447**	**16223**	**965**	**4540**
	Eurocopter Pod Compatible Configuration					
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	3.1	3440	10585	985	3030
82716-01	Quick Release Maintenance Step	1.8	3454	6252	1024	1853
82701-01	**Step Installation**	**4.9**	**3445**	**16837**	**999**	**4882**
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	3.1	3440	10585	985	3030
82716-01	Quick Release Maintenance Step	1.8	3454	6252	1095	1981
82701-01	**Step Installation (stowed)**	**4.9**	**3445**	**16837**	**1025**	**5011**

* -XX indicates side. Right side is -01, Left side is -02.

**Lateral arm is negative for left side installation.

Table 25-2 – Quick Release Maintenance Step Weight and Balance

Extended Quick Release Maintenance Step

Standard

P/N *	Description	Weight	Longitudinal		Lateral **	
			arm	moment	arm	moment
	Low Provisions Configuration	lb	in	in-lb	in	in-lb
78602-01-XX	Low Provisions Installation	6.4	135.6	867.5	37.2	238.0
82711-01-XX	Maintenance Step	9.0	126.5	1138.5	37.9	341.1
82702-01-XX	**Extended Step Installation**	**15.4**	**130.3**	**2006.0**	**37.6**	**579.1**
78602-01-XX	Low Provisions Installation	6.4	135.6	867.5	37.2	238.0
82711-01-XX	Maintenance Step (stowed)	9.0	126.5	1138.5	40.7	366.3
82702-01-XX	**Ext. Step Installation (stowed)**	**15.4**	**130.3**	**2006.0**	**39.2**	**604.3**
	High Provisions Configuration					
78602-02-XX	High Provisions Installation	6.4	135.6	867.5	36.5	233.8
82711-01-XX	Quick Release Maintenance Step	9.0	126.5	1138.5	37.2	334.8
82702-01-XX	**Extended Step Installation**	**15.4**	**130.3**	**2006.0**	**36.9**	**568.6**
78602-02-XX	High Provisions Installation	6.4	135.6	867.5	36.5	233.8
82711-01-XX	Quick Release Maintenance Step	9.0	126.5	1138.5	39.9	359.1
82702-01-XX	**Ext. Step Installation (stowed)**	**15.4**	**130.3**	**2006.0**	**38.5**	**592.9**
	Eurocopter Pod Compatible Configuration					
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	6.8	135.4	921.0	38.8	263.6
82711-01-XX	Quick Release Maintenance Step	9.0	126.5	1138.5	39.9	359.1
82702-01-XX	**Extended Step Installation**	**15.8**	**130.3**	**2059.5**	**39.4**	**622.7**
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	6.8	135.4	921.0	38.8	263.6
82711-01-XX	Quick Release Maintenance Step	9.0	126.5	1138.5	42.7	384.3
82702-01-XX	**Ext. Step Installation (stowed)**	**15.8**	**130.3**	**2059.5**	**41.0**	**647.9**

* -XX indicates side. Right side is -01, Left side is -02.

**Lateral arm is negative for left side installation.

Table 25-3 – Extended Quick Release Maintenance Step Weight and Balance

Extended Quick Release Maintenance Step

Metric

P/N *	Description	Weight	Longitudinal		Lateral **	
			arm	moment	arm	moment
	Low Provisions Configuration	kg	mm	mm-kg	mm	mm-kg
78602-01-XX	Low Provisions Installation	2.9	3444	9974	945	2736
82711-01-XX	Maintenance Step	4.1	3213	13085	963	3920
82702-01-XX	**Extended Step Installation**	7.0	3309	23059	955	6657
78602-01-XX	Low Provisions Installation	2.9	3444	9974	945	2736
82711-01-XX	Maintenance Step (stowed)	4.1	3213	13085	1034	4210
82702-01-XX	**Ext. Step Installation (stowed)**	7.0	3309	23059	997	6946
	High Provisions Configuration					
78602-02-XX	High Provisions Installation	2.9	3444	9974	927	2685
82711-01-XX	Quick Release Maintenance Step	4.1	3213	13085	945	3848
82702-01-XX	**Extended Step Installation**	7.0	3309	23059	937	6533
78602-02-XX	High Provisions Installation	2.9	3444	9974	927	2685
82711-01-XX	Quick Release Maintenance Step	4.1	3213	13085	1013	4127
82702-01-XX	**Ext. Step Installation (stowed)**	7.0	3309	23059	978	6812
	Eurocopter Pod Compatible Configuration					
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	3.1	3439	10582	986	3032
82711-01-XX	Quick Release Maintenance Step	4.1	3213	13085	1013	4127
82702-01-XX	**Extended Step Installation**	7.1	3310	23667	1001	7160
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	3.1	3439	10582	986	3032
82711-01-XX	Quick Release Maintenance Step	4.1	3213	13085	1085	4417
82702-01-XX	**Ext. Step Installation (stowed)**	7.1	3310	23667	1042	7449

* -XX indicates side. Right side is -01, Left side is -02.

**Lateral arm is negative for left side installation.

Table 25-4 – Extended Quick Release Maintenance Step Weight and Balance

25-4 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual for torque values not listed in this ICA.

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Quick Release Maintenance Step on Eurocopter AS350 & AS355 Series**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-20**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 827.91)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82701, 82702**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA827.91, Rev. 4)
A527.2 (b) Practical arrangement *(b)* The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions.		
A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 and 25-2
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-3
A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections *(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment *(e)* Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc *(f)* All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-4
A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Chapter 4

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** December 04, 2012

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: _____ **Phone #** _____ **Email:** _____ **Mail Routing Symbol:** _____

Signature: _____ **Date:** _____ **NAPA Number** _____

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Fixed Cabin Step on Eurocopter AS350 & AS355 Series**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-20**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 827.92)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82705, 82706, 82709, 82750, 82751, 82752, 82770, 82771, 82772, 82773**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA827.92, Rev. 3)
A527.2 (b) Practical arrangement *(b)* The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
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A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
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A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 thru 25-6
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-8
A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections *(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment *(e)* Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc *(f)* All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-9
A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Section 4

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** November 30, 2012

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: _____ **Phone #** _____ **Email:** _____ **Mail Routing Symbol:** _____

Signature: _____ **Date:** _____ **NAPA Number** _____

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 827.92

EUROCOPTER AS350 & AS355 SERIES

FIXED CABIN STEPS

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Fixed Cabin Step installed in accordance with AERO Design Ltd. Document Control List DCL827-3, Revision 6, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 3
Date: 29 November 2012

AERO Design Ltd.
Engineering Consultants

2013 – 39th Avenue N.E., Calgary, Alberta T2E 6R7
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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
0	20 October 2008		Original Issue
1	23 July 2009		
2	28 June 2010		
3	29 November 2012		

LIST OF EFFECTIVE PAGES

List of Revisions	Revision 0 (Original Issue)	20 October 2008
	Revision 1	23 July 2009
	Revision 2	28 June 2010
	Revision 3	29 November 2012

List of Effective Pages

Description	Pages	Revision No.
Cover	1	3
Revision Record/List of Effective Pages	2	3
Table of Contents	3	3
00-00-00	4-5	3
04-00-00	6	3
05-00-00	7-8	2
25-50-00	9-20	3

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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Fixed Cabin Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Fixed Cabin Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

The Long Fixed Cabin Step (82705-01) and Long Fixed Commuter Cabin Step (82751-01-XX) are NOT compatible with the AERO Design Ltd. Long or Extra Large Cargo Baskets installed in accordance with STC SH08-16 (drawing 78401 or 94001), but may be installed on the opposite side of the helicopter to the Long or Extra Large Cargo Basket.

The Short Fixed Cabin Step (82706-01) and Short Fixed Commuter Cabin Step (82750-01-XX) are compatible with all AERO Design Ltd. Cargo Baskets installed in accordance with STC SH08-16 in any mounting configuration.

The Full Length Cabin Step (82709-01) and Full Length Commuter Cabin Step (82752-01-XX) are NOT compatible with any AERO Design Ltd. Cargo Baskets installed in accordance with STC SH08-16, but may be installed on the opposite side of the helicopter to the Cargo Basket.

0-5 GENERAL DESCRIPTION

The Fixed Cabin Step installation consists of a step assembly which is attached to the forward end of the skid tube, running aft to the aft cross tube (full length configuration), to the forward cross tube (long configuration), or a bracket attached to the skid tube located under the door (short configuration). The different configurations are provided to accommodate AERO Design Ltd. Quick Release Cargo Baskets while providing the longest step possible for access to the cabin.

The step itself consists of an aluminum extrusion attached to a sheet metal assembly that attaches to the forward end of the skid tube. Aluminum brackets are used to attach the aft end.

The commuter step is an additional section added to the basic step that provides 3 steps up to the cabin. The steps are similar to the non-commuter configuration, but are reinforced at the forward end.

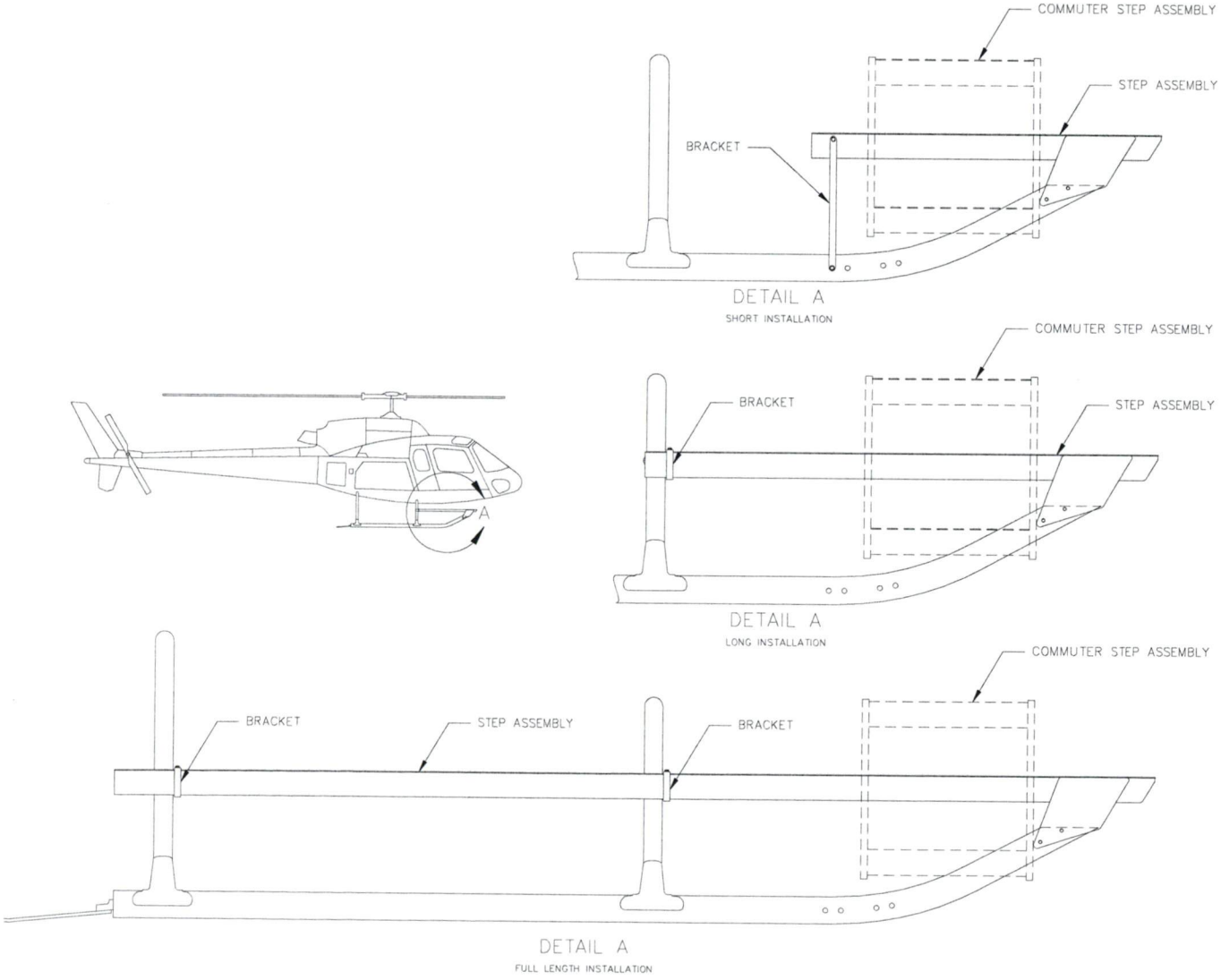


Figure 0-1 – AS350 Fixed Cabin Step Installations

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under Secs. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Fixed Cabin Steps.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Fixed Cabin Step.

Daily Inspection

1. Inspection Area: Step
   a) Full Length step only: Inspect the bracket and clamp attaching the step to the aft cross tube for condition and security.
   b) Long and Full Length steps only: Inspect the bracket and clamp attaching the step to the forward cross tube for condition and security.
   c) Short step only: Inspect bracket attaching aft end of step to skid tube for condition and security.
   d) Inspect the forward step attachment sheet metal bracket for condition and security.
   e) Commuter steps only: Inspect the attachments of the commuter step section to the basic step for condition and security.

100 Hour or Annual Inspection

1. Inspection Area: Step
   a) Visually inspect all mounting hardware for condition and security.
   b) Visually inspect step, mounting brackets, and clamps for condition and security.
   c) Long and Full Length steps only: Check clamps for slipping on the cross tube(s). Step should be parallel to the ground (+/- 0.25"), use height at attachment to forward tip of skid tube as a reference.

Special Inspections

1. Following a hard landing inspect the Fixed Cabin Step installation in accordance with the 100 hour or annual inspection listed above.
2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Step Assembly (including commuter step section)

Part	Type of Damage	Max. Allowable	Repair
Brackets, Clamps	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Step Section	Corrosion	2" x 2" x 0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long	Blend up to 0.010" deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" max at middle of step	None

2. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

¼-28 insert: 3591-4CN375

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

The tread areas have two strips of 3M Safety-Walk grip tape. If the grip tape is damaged replace with equivalent grip tape, or apply Randolph X1567 Wingwalk grip paint or equivalent to the top surface.

2. Brackets / Clamps

The brackets and clamps are supplied painted white. If the paint is damaged, touch up with white polyurethane paint.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Fixed Cabin Step Installation may be applied to the right and/or left side of the helicopter.

Installation of the Commuter Step (any configuration) is identical to the standard installation. Commuter Steps are "sided" right and left. The side is identified in the part number by the last dash number: -01 is Right, -02 is Left.

25-1 SHORT STEP INSTALLATION

Configuration: 82706-01 (standard), 82750-01-XX (commuter), 82770-01 (DART Conversion), 82772-01 (DART Conversion, old style)

Refer to Figure 25-1 and 25-2.

1. Remove existing bolt, nut, and cups from last float provision hole at forward end of skid tube.
2. Insert Bushing 82733-02 into hole in skid tube. Set Bracket 82733-01 (82782-01 for DART conversion) over bushing. Insert AN4-42A bolt with AN960-416 washer through bracket and bushing. Install AN960-416 washer and MS21044N4 nut on bolt. Do not tighten nut.
3. Set step assembly (82715-01 standard, 82718-01-XX commuter, 82770-10 DART Conversion, 82772-10 Dart Conversion) on bracket. Install AN4-42A Bolt, AN960-416 Washers, and MS21044N4 Nut through bushing in step. Do not tighten nut.

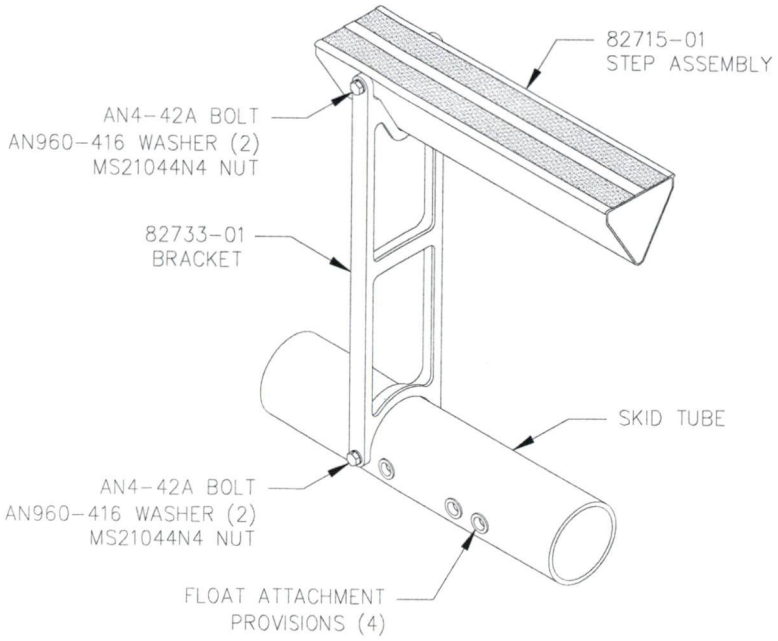


Figure 25-1 – Short Step Aft Attachment

4. At the forward end of the step, install two (2) AN3-35A Bolts, AN960-10 Washers, and MS21044N3 Nuts through existing holes in forward end of skid tube.

   DART Conversion only: use two (2) AN3-37A Bolts.

5. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

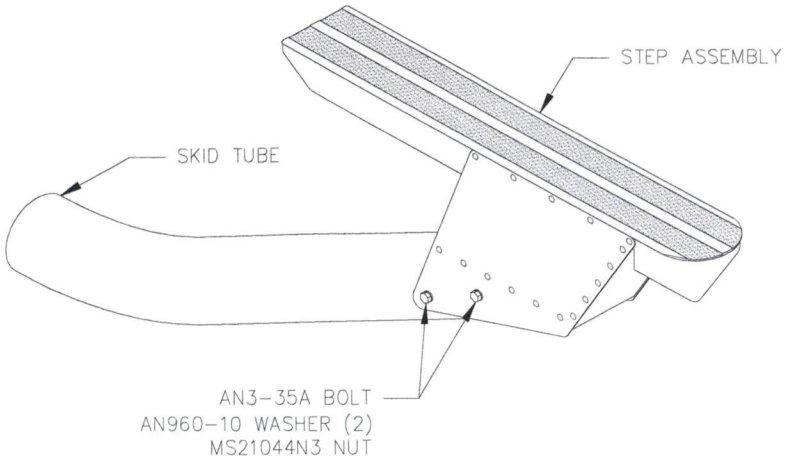


Figure 25-2 – Forward Step Attachment

25-2 SHORT STEP REMOVAL

Configuration: 82706-01 (standard), 82750-01-XX (commuter), 82770-01 (DART Conversion), 82772-01 (DART Conversion, old style)

Refer to figure 25-1 and 25-2.

1. Remove AN3-35A Bolts (or AN3-37A Bolts), AN960-10 Washers, and MS21044N3 Nuts attaching forward end of step to skid tube.
2. Remove AN4-42A Bolt, AN960-416 Washers, and MS21044N4 Nut attaching step to bracket. Remove step.
3. Remove AN4-42A Bolt, AN960-416 Washers, and MS21044N4 Nut attaching bracket to skid tube. Remove bracket and bushing from skid tube.
4. Install 22201TK050-072X Screw, 350A41-1095-20 Cup (2), 23119TK050X Washer, and ASN52320BH050N Nut in hole in skid tube. Refer to Illustrated Parts book and Maintenance Manual.

25-3 LONG STEP INSTALLATION

Configuration: 82705-01 (standard), 82751-01-XX (commuter), 82771-01 (DART Conversion), 82773-01 (DART Conversion, old style)

Refer to Figure 25-3 thru 25-5.

1. Attach Clamp Assembly 78620-01 to Bracket 82723-01 (82780-01 or 82785 for DART Conversion) with one (1) AN4-4A Bolt and AN960-416 Washer. Orient clamp with T-bolt side inboard, and bracket forward. Torque bolt to 30-40 in-lbs. Slide bracket with clamp onto aft end of step.

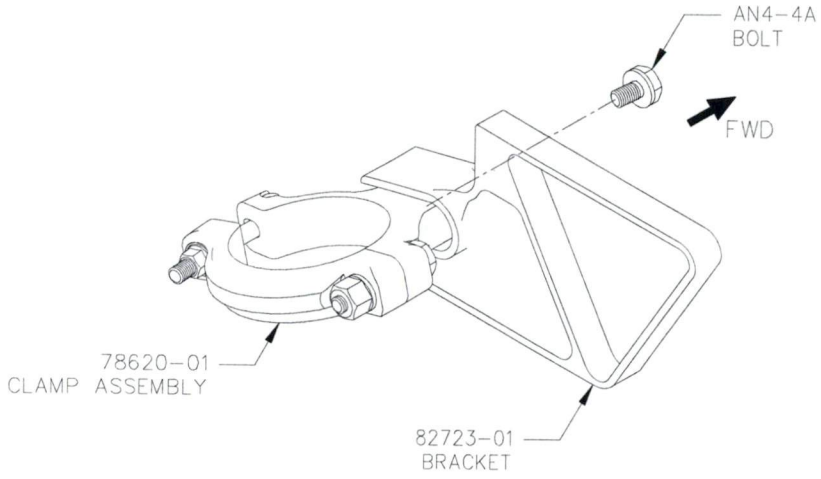


Figure 25-3 – Clamp and Bracket Assembly
(Right side shown, left side opposite)

2. Locate forward end of step assembly (82717-01 standard, 82718-02-XX commuter) on skid tube. Install two (2) AN3-35A Bolts, AN960-10 Washers, and MS21044N3 Nuts into existing holes in forward end of skid tube.

   DART Conversion Only: Use step assembly 82771-10 or 82773-10; two (2) AN3-37A bolts.

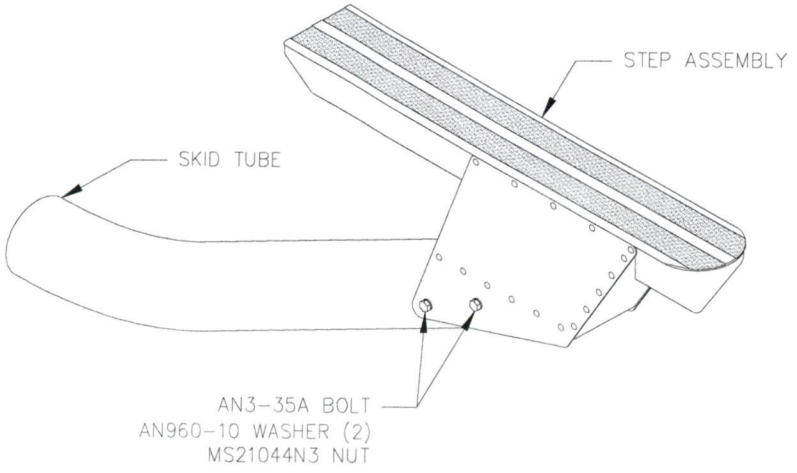


Figure 25-4 – Forward Step Attachment

3. Slide clamp and bracket assembly aft along step until clamp can be attached to forward cross-tube.

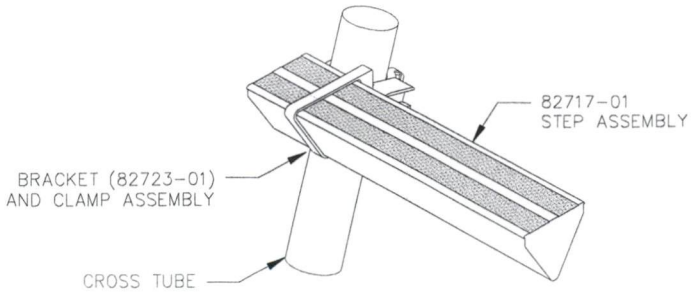


Figure 25-5 – Long Step Aft Attachment

4. Tighten clamp bolts to prevent the clamp from slipping on the cross tube.
5. Level the step parallel to the ground (+/- 0.25"). Nominal height is 17.5".
6. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

25-4 LONG STEP REMOVAL

Configuration: 82705-01 (standard), 82751-01-XX (commuter), 82771-01 (DART Conversion), 82773-01 (DART Conversion, old style)

Refer to Figure 25-3 thru 25-5.

1. Remove AN3-35A Bolts (or AN3-37A Bolts), AN960-10 Washers, and MS21044N3 Nuts attaching forward end of step to skid tube.
2. Remove bolts securing clamp to cross tube.
3. Remove step assembly.

25-5 FULL LENGTH STEP INSTALLATION

Configuration: 82709-01 (standard), 82752-01-XX (commuter)

Refer to Figure 25-6 thru 25-8.

1. Attach Clamp 78620-01 to Bracket 82723-01 with AN4-4A Bolt and AN960-416 Washer. Orient clamp with T-bolt side inboard, and bracket on forward side of cross tube. Torque bolt to 30-40 in-lbs. Slide bracket with clamp onto aft end of step. See figure 25-6. Repeat for second Bracket.

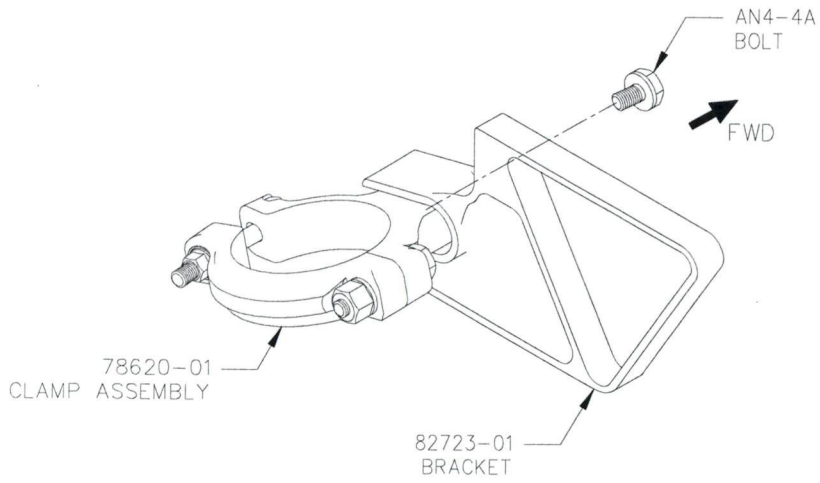


Figure 25-6 – Clamp and Bracket Assembly
(Right side shown, left side opposite)

2. Locate forward end of step assembly on forward end of skid tube. Install two (2) AN3-35A Bolt, AN960-10 Washers, and MS21044N3 Nut into existing holes in forward end of skid tube. See figure 25-7.

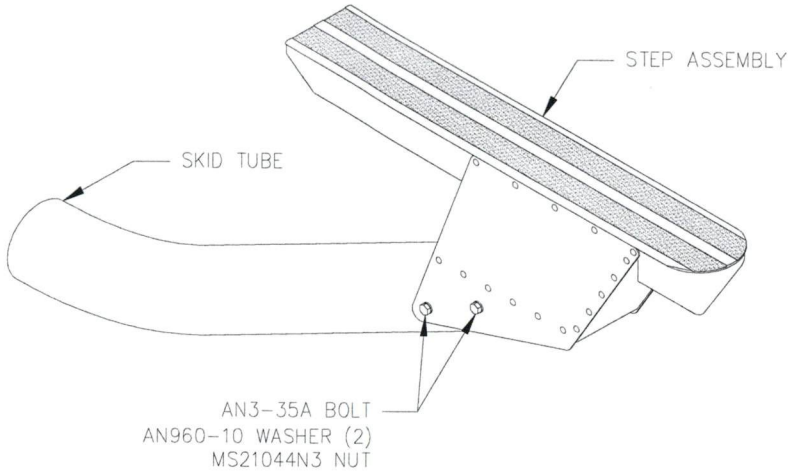


Figure 25-7 – Forward Step Attachment

3. Slide clamp and bracket (82723-01) assembly along step until clamp can be attached to forward cross-tube. Bracket can be opened with a flat head screwdriver if necessary. Repeat at aft cross tube. See Figure 25-8

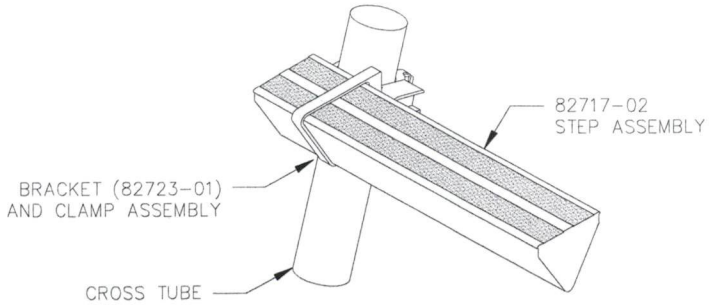


Figure 25-8 – Aft Step Attachment

4. Tighten clamp bolts to prevent the clamp from slipping on the cross tube.
5. Level the step parallel to the ground (+/- 0.25"). Nominal height is 17.5".
6. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

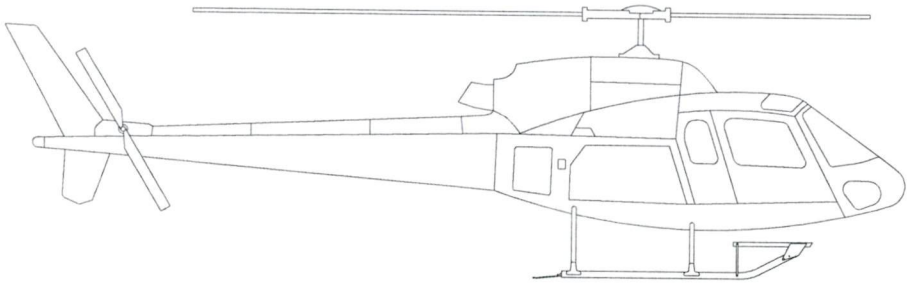
25-6 FULL LENGTH STEP REMOVAL

Configuration: 82709-01

Refer to figures 25-6 thru 25-8.

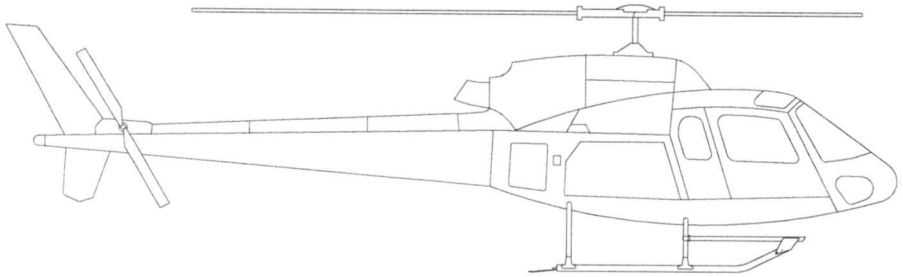
1. Remove fasteners from clamps on forward and aft cross tubes.
2. Remove AN3-35A bolts, washers and nuts attaching forward end of step to forward tip of skid tube.
3. Remove step assembly.

25-7 BILL OF MATERIALS



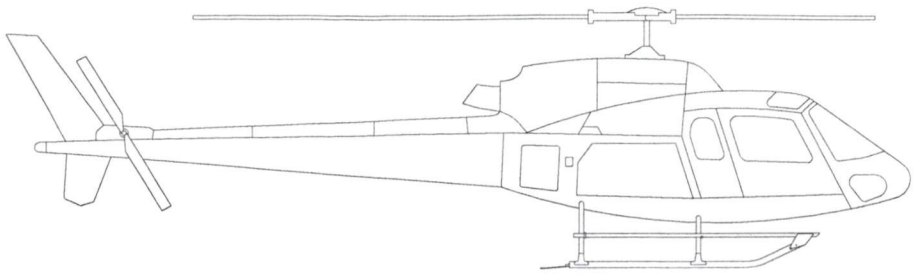
SHORT CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82706-01	**Short Cabin Step Installation**
. 1	82715-01	Step Assembly
. 1	82733-01	Bracket
. 1	82733-02	Bushing
. 2	AN4-42A	Bolt
. 4	AN960-416	Washer
. 2	MS21044N4	Nut
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



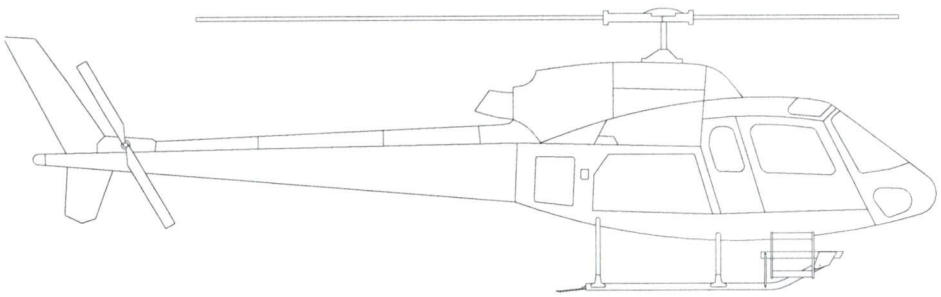
LONG CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82705-01	**Long Cabin Step Installation**
. 1	82717-01	Step Assembly
. 1	82723-01	Bracket
. 1	78620-01	Clamp Assembly
. 1	AN4-4A	Bolt
. 1	AN4-5A	Bolt
. 2	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



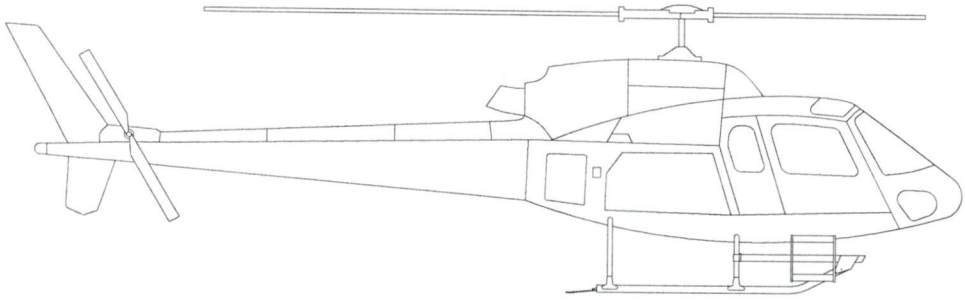
FULL LENGTH CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82709-01	**Full Length Cabin Step Installation**
. 1	82717-02	Step Assembly
. 2	82723-01	Bracket
. 2	78620-01	Clamp Assembly
. 2	AN4-4A	Bolt
. 2	AN4-5A	Bolt
. 4	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



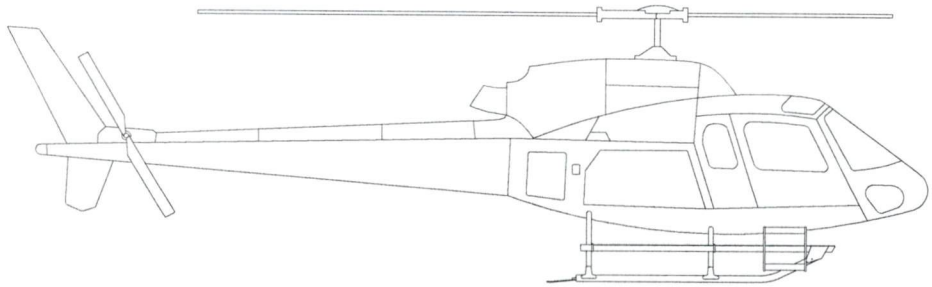
SHORT COMMUTER CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82750-01-01	**Short Commuter Cabin Step Installation (RH)**
	82750-01-02	**Short Commuter Cabin Step Installation (LH)**
. 1	82718-01-01	Step Assembly (RH)
. 1	82718-01-02	Step Assembly (LH)
. 1	82733-01	Bracket
. 1	82733-02	Bushing
. 2	AN4-42A	Bolt
. 4	AN960-416	Washer
. 2	MS21044N4	Nut
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



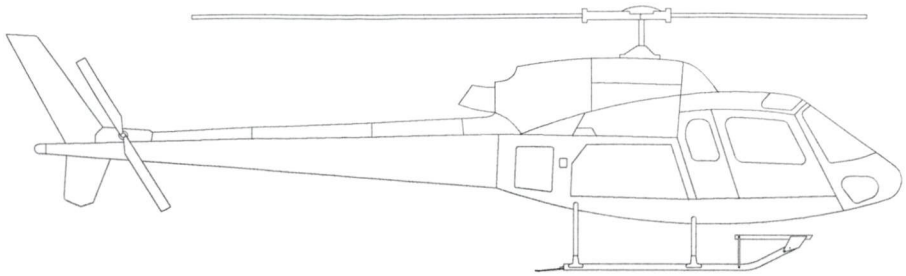
LONG COMMUTER CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82751-01-01	**Long Commuter Cabin Step Installation (RH)**
	82751-01-02	**Long Commuter Cabin Step Installation (LH)**
. 1	82718-02-01	Step Assembly (RH)
. 1	82718-02-02	Step Assembly (LH)
. 1	82723-01	Bracket
. 1	78620-01	Clamp Assembly
. 1	AN4-4A	Bolt
. 1	AN4-5A	Bolt
. 2	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



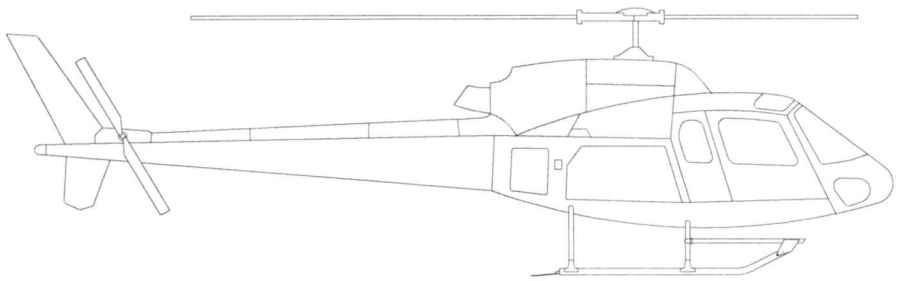
FULL LENGTH COMMUTER CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82752-01-01	**Full Length Commuter Cabin Step Installation (RH)**
	82752-01-02	**Full Length Commuter Cabin Step Installation (LH)**
. 1	82718-03-01	Step Assembly (RH)
. 1	82718-03-02	Step Assembly (RH)
. 2	82724-01	Bracket
. 2	78620-01	Clamp Assembly
. 2	AN4-4A	Bolt
. 1	AN4-5A	Bolt
. 3	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



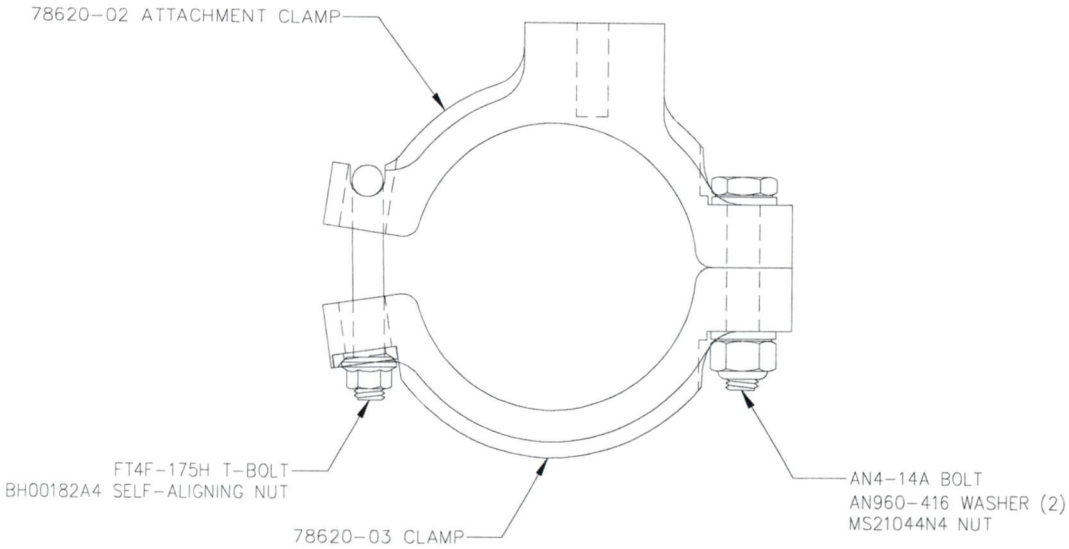
SHORT CABIN STEP INSTALLATION - DART CONVERSION

Qty.	Part Number	Description
	82770-01	**Short Cabin Step Installation – DART Conversion**
	82772-01	**Short Cabin Step Installation – DART Conversion (old style)**
. 1	82770-10	Step Assembly (82770-01)
. 1	82772-10	Step Assembly (82772-01)
. 1	82782-01	Bracket
. 1	82733-02	Bushing
. 2	AN4-42A	Bolt
. 4	AN960-416	Washer
. 2	MS21044N4	Nut
. 2	AN3-37A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



LONG CABIN STEP INSTALLATION - DART CONVERSION

Qty.	Part Number	Description
	82771-01	**Long Cabin Step Installation – DART Conversion**
	82773-01	**Long Cabin Step Installation – DART Conversion (Old Style)**
. 1	82771-10	Step Assembly (82771-01)
. 1	82773-10	Step Assembly (82773-01)
. 1	82780-01	Bracket (82771-01)
. 1	82785-01	Bracket (82773-01)
. 1	78620-01	Clamp Assembly
. 1	AN4-4A	Bolt
. 1	AN960-416	Washer
. 2	AN3-37A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



CLAMP ASSEMBLY

Qty.	Part Number	Description
	78620-01	**Clamp Assembly**
. 1	78620-02	Attachment Clamp (with mounting pad)
. 1	78620-03	Clamp (no mounting pad)
. 1	AN4-14A	Bolt
. 2	AN960-416	Washer
. 1	MS21044N4	Nut
. 1	FT4F-175H	T-Bolt
. 1	BH00182A4	Self Aligning Nut

25-8 WEIGHT AND BALANCE

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82706-01	Short Cabin Step Installation	4.2	69.1	290.2	39.4	165.5
82705-01	Long Cabin Step Installation	5.0	76.2	381.0	39.4	197.0
82709-01	Full Length Cabin Step Installation	9.8	107.9	1057.4	39.4	386.1
82750-01-XX	Short Commuter Cabin Step Installation (-01 RH / -02 LH)	12.2	70.7	862.2	41.9	511.1
82751-01-XX	Long Commuter Cabin Step Installation (-01 RH / -02 LH)	13.0	73.3	953.0	41.7	542.6
82752-01-XX	Full Length Commuter Cabin Step Installation (-01 RH / -02 LH)	17.8	91.5	1629.4	41.1	731.7
82770-01	Short Cabin Step Installation – DART Conversion	5.0	69.5	347.5	39.4	197.0
82771-01	Long Cabin Step Installation – DART Conversion	6.5	69.5	451.8	39.4	256.1
82772-01	Short Cabin Step Installation – DART Conversion, Old Style	6.8	77.1	524.3	39.4	267.9
82773-01	Long Cabin Step Installation – DART Conversion, Old Style	9.5	77.1	732.5	39.4	374.3

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	Arm	moment
		kg	mm	mm-kg	Mm	mm-kg
82706-01	Short Cabin Step Installation	1.9	1755	3335	1000	1900
82705-01	Long Cabin Step Installation	2.3	1935	4378	1000	2260
82709-01	Full Length Cabin Step Installation	4.4	2741	12155	1000	4434
82750-01-XX	Short Commuter Cabin Step Installation (-01 RH / -02 LH)	5.5	1795	9910	1064	5874
82751-01-XX	Long Commuter Cabin Step Installation (-01 RH / -02 LH)	5.9	1862	10953	1060	6236
82752-01-XX	Full Length Commuter Cabin Step Installation (-01 RH / -02 LH)	8.1	2325	18727	1044	8410
82770-01	Short Cabin Step Installation – DART Conversion	2.3	1765	3994	1000	2262
82771-01	Long Cabin Step Installation – DART Conversion	2.9	1765	5192	1000	2941
82772-01	Short Cabin Step Installation – DART Conversion, Old Style	3.1	1958	6026	1000	3077
82773-01	Long Cabin Step Installation – DART Conversion, Old Style	4.3	1958	8418	1000	4299

Note: Lateral arms are given for right side installation. For installation on left side, lateral arms are negative.

25-9 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual for torque values not listed in this ICA.

Transport Canada

Transports Canada

1100-9700 Jasper Avenue
Edmonton, Alberta T5J 4E6

Your file Votre reference
827

Our file Notre reference
C-10-1026
SH09-38

December 1, 2010

Aero Design Ltd.
2013 – 39th Avenue NE
Calgary, Alberta
Canada T2E 6R7

Dear Sirs:

SUBJECT: REVISION TO SUPPLEMENTAL TYPE CERTIFICATE NO. SH09-38 – ISSUE 3 DATED NOVEMBER 30, 2010 – INSTALLATION OF QUICK RELEASE MAINTENANCE STEP; INSTALLATION OF MAINTENANCE PEG STEP; INSTALLATION OF FIXED CABIN STEP – EUROCOPTER AS350B, B1, B2, B3, BA, D, D1; EUROCOPTER FRANCE AS355E, F, F1, F2, N, NP ISSUED TO AERO DESIGN LTD.

This Supplemental Type Certificate (STC) is issued in response to your application. Included with the STC are documents bearing the original Transport Canada signatures.

The transfer of these documents in the name of another person requires a prior approval from the Minister in accordance with Canadian Aviation Regulations (CAR) 521.357.

To accomplish this modification, the requirements of CAR 561 apply if parts are manufactured.

Embodiment of this modification is considered to be a maintenance activity and the requirements of CAR 571.06(4) will apply.

An STC holder is required to report any service problem experienced with their product. Therefore, should you be come aware of any defect, malfunction or failure resulting from the design change, it is your responsibility to submit a Service Difficulty Report to Transport Canada in accordance with CAR Part V, Subpart 91. Other Obligations as a Design Approval Document Holder are contained in CAR 521, Division VIII.

Yours truly,

J. Staal

J. Staal
Aircraft Certification Engineering Technologist
Prairie and Northern Region
Phone: 780-495-5227
Facs: 780-495-7963

Encl.

Canada

Transport Canada Transports Canada

Department of Transport

Supplemental Type Certificate

This approval is issued to:

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada T2E 6R7

Number: SH09-38
Issue No.: 3
Approval Date: August 07, 2009
Issue Date: November 30, 2010

Responsible Office: Prairie and Northern

Aircraft/Engine Type or Model: EUROCOPTER AS 350 B, AS 350 B1, AS 350 B2, AS 350 B3, AS 350 BA, AS 350 D, AS 350 D1, EUROCOPTER FRANCE AS 355 E, AS 355 F, AS 355 F1, AS 355 F2, AS 355 N, AS 355 NP

Canadian Type Certificate or Equivalent: EUROCOPTER AS 350: H-83
EUROCOPTER FRANCE AS 355: H-87

Description of Type Design Change: Installation of Quick Release Maintenance Step; Installation of Maintenance Peg Step; Installation of Fixed Cabin Step

Installation/Operating Data, Required Equipment and Limitations:

Configuration A – Quick Release Maintenance Step:

Installation of the External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is required for installation of the Quick Release Maintenance Step. Installation of the Quick Release Maintenance Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-1, Revision 4, dated 29 June 2010, or later approved revision.

External Attachment Provisions may remain installed if the Step Installation is removed.

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS827.90, Revision 2, dated 24 June 2010, or later approved revision is required with this installation.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.91, Revision 3, dated 28 June 2010, or later accepted revision is required with this installation.

.....2/

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the modified product.

DEPARTMENT OF TRANSPORT CANADA MINISTÈRE DES TRANSPORTS

R.A. Goossens
For Minister of Transport

Canada

(Continuation Sheet)

Number: SH09-38 Issue 3

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

Configuration B – Maintenance Peg Step:
Installation of the Maintenance Peg Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-2, Revision 3, dated 29 June 2010, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.93, Revision 2, dated 28 June 2010, or later accepted revision is required with this installation.

Configuration C – Fixed Cabin Step:
Installation of the Fixed Cabin Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-3, Revision 4, dated 29 June 2010, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.92, Revision 2, dated 28 June 2010, or later accepted revision is required with this installation.

Data Pertinent to All Configurations:
Any combination of Configurations A, B, or C may be simultaneously installed.

Basis of Certification:
Basis of certification remains as specified in the applicable Type Certificate Data Sheets for affected airworthiness standards.

– End –

Transport Canada Transports Canada

Department of Transport

Supplemental Type Certificate

This approval is issued to:

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada T2E 6R7

Number: SH09-38
Issue No.: 3
Approval Date: August 07, 2009
Issue Date: November 30, 2010

Responsible Office: Prairie and Northern

Aircraft/Engine Type or Model: EUROCOPTER AS 350 B, AS 350 B1, AS 350 B2, AS 350 B3, AS 350 BA, AS 350 D, AS 350 D1,
EUROCOPTER FRANCE AS 355 E, AS 355 F, AS 355 F1, AS 355 F2, AS 355 N, AS 355 NP

Canadian Type Certificate or Equivalent: EUROCOPTER AS 350: H-83
EUROCOPTER FRANCE AS 355: H-87

Description of Type Design Change: Installation of Quick Release Maintenance Step; Installation of Maintenance Peg Step; Installation of Fixed Cabin Step

Installation/Operating Data, Required Equipment and Limitations:

Configuration A – Quick Release Maintenance Step:

Installation of the External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is required for installation of the Quick Release Maintenance Step. Installation of the Quick Release Maintenance Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-1, Revision 4, dated 29 June 2010, or later approved revision.

External Attachment Provisions may remain installed if the Step Installation is removed.

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS827.90, Revision 2, dated 24 June 2010, or later approved revision is required with this installation.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.91, Revision 3, dated 28 June 2010, or later accepted revision is required with this installation.

.....2/

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the modified product.

DEPARTMENT OF TRANSPORT CANADA MINISTÈRE DES TRANSPORTS

R.A. Goossens
For Minister of Transport

Canada

(Continuation Sheet)

Number: SH09-38 Issue 3

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

Configuration B – Maintenance Peg Step:
Installation of the Maintenance Peg Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-2, Revision 3, dated 29 June 2010, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.93, Revision 2, dated 28 June 2010, or later accepted revision is required with this installation.

Configuration C – Fixed Cabin Step:
Installation of the Fixed Cabin Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-3, Revision 4, dated 29 June 2010, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.92, Revision 2, dated 28 June 2010, or later accepted revision is required with this installation.

Data Pertinent to All Configurations:
Any combination of Configurations A, B, or C may be simultaneously installed.

Basis of Certification:
Basis of certification remains as specified in the applicable Type Certificate Data Sheets for affected airworthiness standards.

– End –

3. Abrade the paint on the crosstube to which abrasion strip will be applied with 400 grit sandpaper.
4. Saturate a clean cloth with Methyl Ethyl Ketone (MEK) or 4105S Wash'n'Wipe Degreaser and wipe area until there is no residue.
5. Remove liner from the adhesive side of the Abrasion Strip.
6. Locate the Abrasion Strip on the crosstube so that it protects the crosstube from both clamps. The Abrasion Strip should wrap around the entire circumference of the crosstube and leave a max 0.13" (3mm) gap on the aftward side of the crosstube. Align the Abrasion Strip with the surface and press one edge to surface with finger.
7. Squeegee remaining portion of the Abrasion Strip onto the surface using firm overlapping strokes.

32.4 ABRASION STRIP REMOVAL

To remove a D2856-400-720 Abrasion Strip:

1. Being careful not to mark/scratch the part on which it is installed, lift edge and carefully peel Abrasion Strip at an angle of 90 to 180 degrees. Speed and angle of removal may affect amount of residue and the amount of paint removed.
2. Saturate a clean cotton cloth with Methyl Ethyl Ketone (MEK) or 4105S Wash'n'Wipe Degreaser and wipe the surface to clean the entire area and remove excess adhesive.

32.5 WEIGHT AND BALANCE

The following weight and balance information is for the Dart Installation. The weight and balance of the parts that are removed from the aircraft to perform this installation are the responsibility of the installer.

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D350-591-111A	14.6 lb 6.62 kg	40.6 in 1.03 m	592.8 in-lb 6.82 m-kg	116.0 in 2.95 m	1694 in-lb 19.53 m-kg
D350-591-113	9.7 lb 4.40 kg	40.6 in 1.03 m	393.8 in-lb 4.53 m-kg	88.0 in 2.24 m	853.6 in-lb 9.86 m-kg
D350-591-115	8.9 lb 4.04 kg	38.4 in 0.98 m	341.8 in-lb 3.96 m-kg	88.0 in 2.24 m	783.2 in-lb 9.05 m-kg
D350-591-117A	1.7 lb 0.77 kg	36.5 in 0.93 m	62.1 in-lb 0.72 m-kg	162.9 in 4.14 m	276.9 in-lb 3.19 m-kg
D350-591-119	13.6 lb 6.17 kg	38.4 in 0.98 m	522.2 in-lb 6.05 m-kg	116.0 in 2.95 m	1578 in-lb 18.20 m-kg
D350-591-121/-122	8.0 lb 3.63 kg	40.6 in 1.03 m	324.8 in-lb 3.74 m-kg	88.0 in 2.24 m	704.0 in-lb 8.13 m-kg
D350-591-123/-124	7.0 lb 3.17 kg	38.4 in 0.98 m	268.8 in-lb 3.11 m-kg	88.0 in 2.24 m	616.0 in-lb 7.10 m-kg
D350-591-133	6.8 lb 3.07 kg	38.6 in 0.98 m	262.5 in-lb 3.01 m-kg	133.8 in 3.40 m	907.2 in-lb 10.44 m-kg
D350-591-211/-212	11.4 lb 5.17 kg	40.6 in 1.03 m	462.8 in-lb 5.33 m-kg	116.0 in 2.95 m	1322 in-lb 15.25 m-kg
D350-591-213/-214	6.3 lb 2.88 kg	40.6 in 1.03 m	255.8 in-kg 2.97 m-kg	88.0 in 2.24 m	554.4 in-lb 6.45 m-kg
D350-591-215/-216	5.9 lb 2.70 kg	38.4 in 0.98 m	226.6 in-kg 2.65 m-kg	88.0 in 2.24 m	519.2 in-lb 6.05 m-kg

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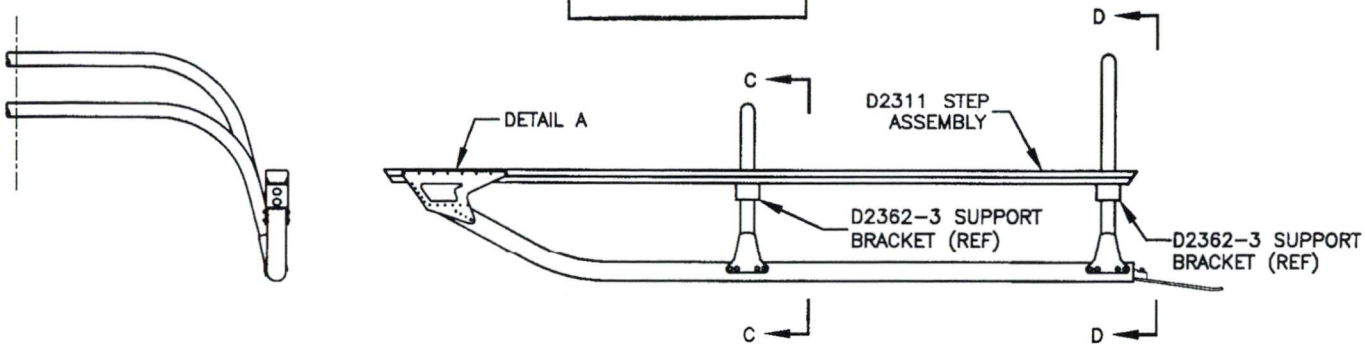


FIGURE 32-1: D350-591-111A ***Heli-Access-Step*** ™, Long Step – High Skid

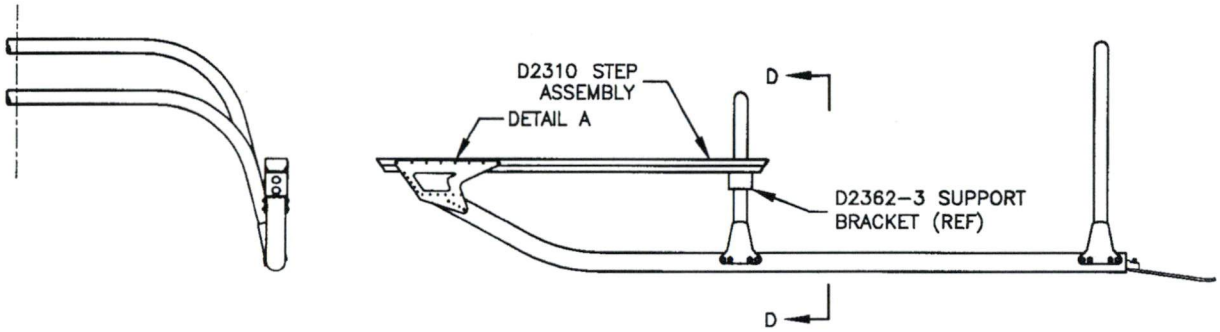


FIGURE 32-2: D350-591-113 ***Heli-Access-Step*** ™, Short Step – High Skid

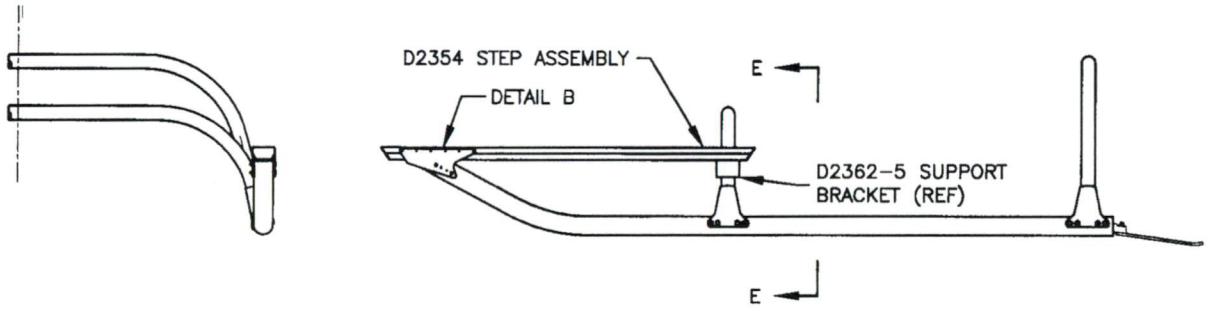


FIGURE 32-3: D350-591-115 ***Heli-Access-Step*** ™, Short Step – Low Skid

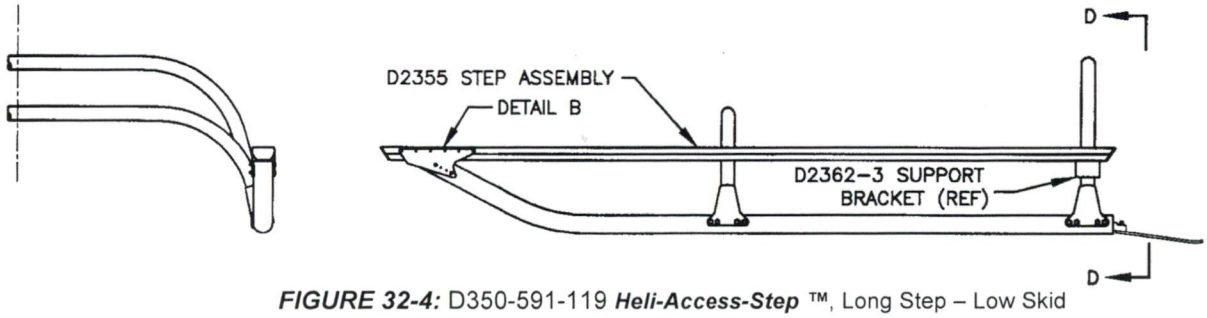


FIGURE 32-4: D350-591-119 ***Heli-Access-Step*** ™, Long Step – Low Skid

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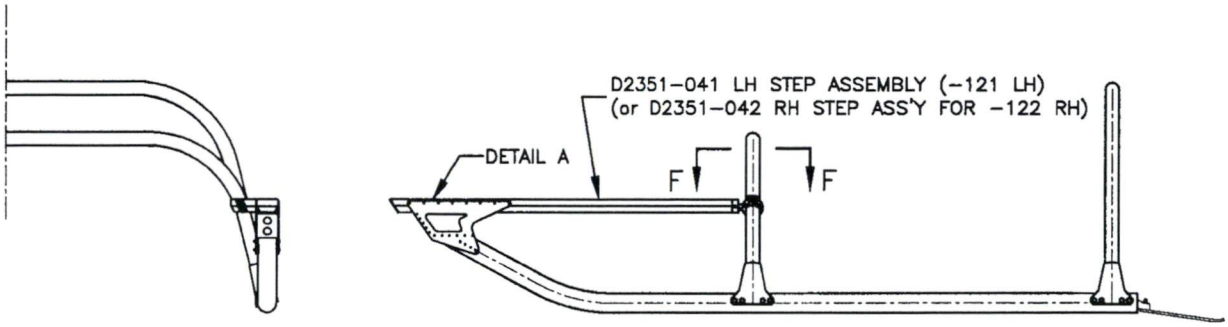


FIGURE 32-5: D350-591-121 ***Heli-Access-Step***™, Aircruiser Float Compatible Step – High Skid, LH (shown)
(D350-591-122, RH Opposite)

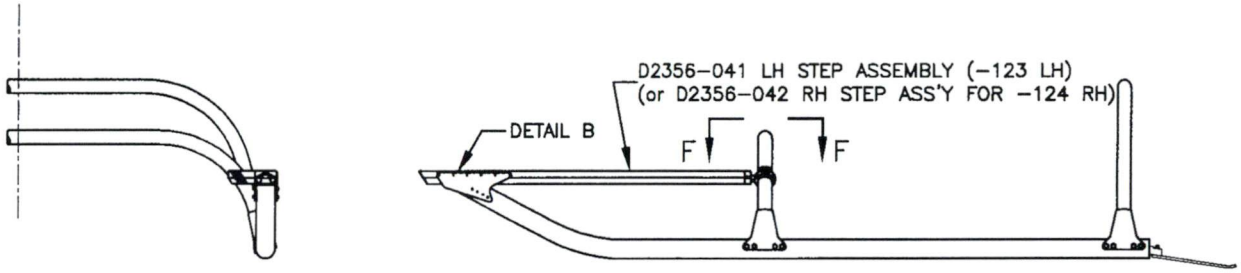
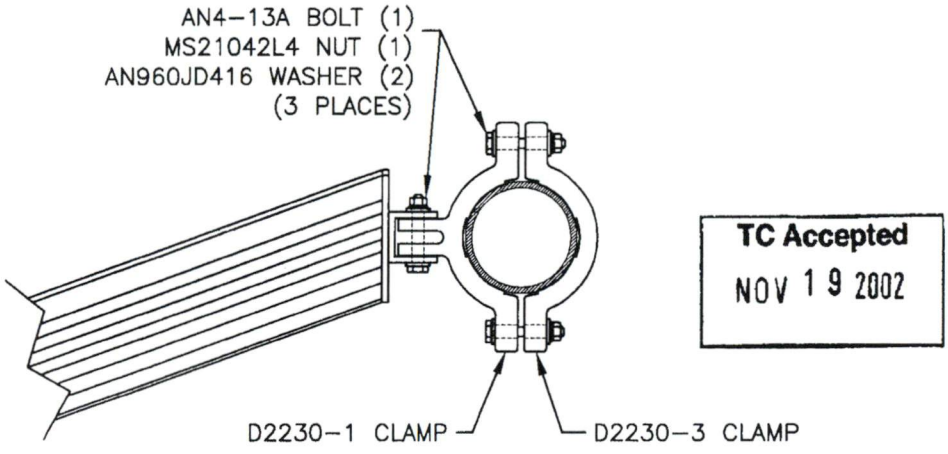


FIGURE 32-6: D350-591-123 ***Heli-Access-Step***™, Aircruiser Float Compatible Step – Low Skid. LH (shown)
(D350-591-124, RH Opposite)



TC Accepted
NOV 19 2002

DETAIL F

FIGURE 32-7: Float Step Attachment

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Access Steps

Heli-Access-Step™

The Heli-Access-Steps™ for the Eurocopter AS350/AS355 were designed to suit a number of landing gear configurations and operational needs. These steps are available in a variety of lengths and are compatible with the Air Cruiser or the Aerazur flotation systems.

The steps mount on the forward end of the Skidtube with a sheet metal enclosure and/or to the crosstubes using a reliable, lightweight support/clamping system.

Painted white with a high-gloss, scratch resistant finish, DART steps feature a non-skid surface.



DART aerospace

HELI-ACCESS-STEP™

Approval	STC Number	A/C Approved	STC Description
Canada	SH92-6	AS350 B/B1/B2/B3/BA/D/D1 / AS355 E/F/F1/F2/N/NP	Heli-Access-Step™
USA	SH967NE	AS350 B/B1/B2/B3/BA/C/D/D1 / AS355 E/ F/F1/F2/N	Heli-Access-Step™
France	157-SI-0930	AS350 Series	Heli-Access-Step™
Germany	RC 1148	AS350 B/B1/B2/B3/BA / AS355 E/F/F1/F2	Heli-Access-Step™
Japan	STC-88-TYO	AS350 B/B1/B2/B3/BA / AS355 F/F1/F2	Heli-Access-Step™
Brazil	1999S02-01	AS350 B1/B2/B3/BA	Heli-Access-Step™
Brazil	1999S02-02	AS355 F/F1/F2/N	Heli-Access-Step™
Brazil	1999S02-03	AS350 B	Heli-Access-Step™
UK	27937	AS350 Series	Heli-Access-Step™
UK	27938	AS355 Series	Heli-Access-Step™
Eurocopter	350 A 08 4127	AS350 B2	Heli-Access-Step™
Canada	SH93-1	AS350 B/B1/B2/B3/BA/C/D/D1 / AS355 E/ F/F1/F2	Maintenance Step
USA	SR00600NY	AS350 B/B1/B2/B3/BA/C/D/D1 / AS355 E/ F/F1/F2	Maintenance Step
Canada	SH99-7	AS350 B/B1/B2/B3/BA/C/D/D1 / AS355 E/F/F1/F2	Toe Step
USA	SR00646SE	AS350 B/B1/B2/B3/BA/C/D/D1 / AS355 E/F/F1/F2/N	Toe Step
UK	28081	AS350 B/B1/B2/B3/BA	Toe Step
UK	28082	AS355 F/F1/F2/N	Toe Step

New approvals are continually being added; if you do not see your required approval, contact your DART sales office to verify the status.

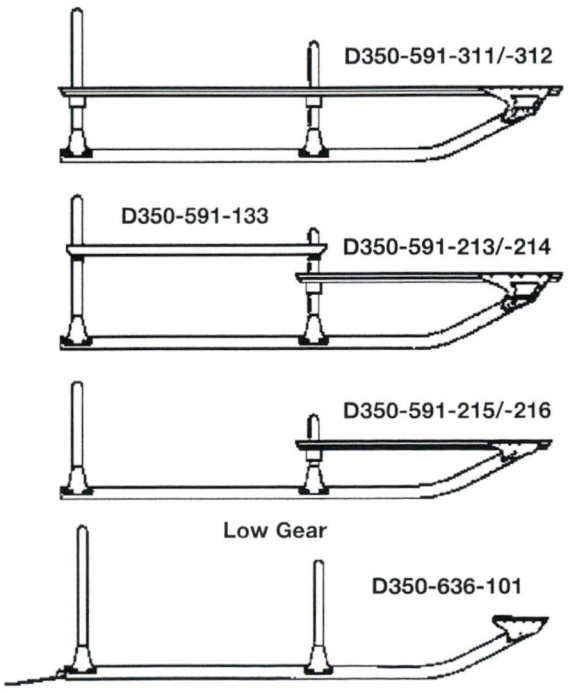
Part Number	Product Description	Kit Weight	Installation Time
D350-591-311	Heli-Access-Step™ LH long step, high gear, Aerazur float compatible	12.00 lbs / 5.40 kg	3 hrs
D350-591-312	Heli-Access-Step™ RH long step, high gear, Aerazur float compatible	12.00 lbs / 5.40 kg	3 hrs
D350-591-213	Heli-Access-Step™ LH short step, high gear, Aerazur float compatible	6.30 lbs / 2.88 kg	3 hrs
D350-591-214	Heli-Access-Step™ RH short step, high gear, Aerazur float compatible	6.30 lbs / 2.88 kg	3 hrs
D350-591-215	Heli-Access-Step™ LH short step, low gear, Aerazur float compatible	5.90 lbs / 2.70 kg	3 hrs
D350-591-216	Heli-Access-Step™ RH short step, low gear, Aerazur float compatible	5.90 lbs / 2.70 kg	3 hrs
D350-591-117A	Pre-Flight Step	1.70 lbs / 0.77 kg	1 hr
D350-591-133	Aft Maintenance Step	6.80 lbs / 3.07 kg	1 hr
D350-615-041	GHW Modification Kit	N/A	1 hr
D350-591-121	Heli-Access-Step™ LH, short step, high gear, Air Cruiser float compatible	8.00 lbs / 3.63 kg	3 hrs
D350-591-122	Heli-Access-Step™ RH, short step, high gear, Air Cruiser float compatible	8.00 lbs / 3.63 kg	3 hrs
D350-591-123	Heli-Access-Step™ LH, short step, low gear, Air Cruiser float compatible	7.00 lbs / 3.17 kg	3 hrs
D350-591-124	Heli-Access-Step™ RH, short step, low gear, Air Cruiser float compatible	7.00 lbs / 3.17 kg	3 hrs
D350-721-045	Maintenance Step	1.00 lbs / 0.45 kg	0.5 hrs
D350-721-046	Maintenance Step	1.00 lbs / 0.45 kg	0.5 hrs
D350-636-101	Toe Step	1.00 lbs / 0.50 kg	1 hrs

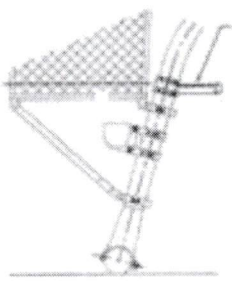
See next page for pricing

Heli-Access-Step™

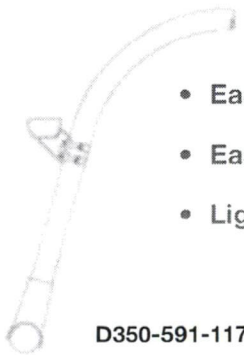
Part Number	Product Description	Special Comments	Aircraft Model	Price (USD)
D350-591-311	Heli-Access-Step™ LH	Long step, high gear. Aerazur float compatible. Price is per side	AS350/AS355	$2,541
D350-591-312	Heli-Access-Step™ RH	Long step, high gear. Aerazur float compatible. Price is per side	AS350/AS355	$2,541
D350-591-213	Heli-Access-Step™ LH	Short step, high gear. Aerazur float compatible. Price is per side	AS350/AS355	$1,649
D350-591-214	Heli-Access-Step™ RH	Short step, high gear. Aerazur float compatible. Price is per side	AS350/AS355	$1,649
D350-591-215	Heli-Access-Step™ LH	Short step, low gear. Aerazur float compatible. Price is per side	AS350	$1,649
D350-591-216	Heli-Access-Step™ RH	Short step, low gear. Aerazur float compatible. Price is per side	AS350	$1,649
D350-591-117A	Pre-Flight Step (Fits LH or RH)	Installs on Aft crosstube. Price is per side	AS350/AS355	$686
D350-591-133	Aft Maintenance Step (Fits LH or RH)	High gear. Price is per side	AS350/AS355	$1,233
D350-615-041	GHW Modification Kit (Fits LH or RH)	For improved ground handling with D350-591-311/-312 steps. One kit modifies one set of ground handling wheels. Price is per side	AS350/AS355	$659
D350-591-121	Heli-Access-Step™ LH	Short step, high gear. Air Cruiser and Aerazur float compatible. Price is per side	AS350/AS355	$1,792
D350-591-122	Heli-Access-Step™ RH	Short step, high gear. Air Cruiser and Aerazur float compatible. Price is per side	AS350/AS355	$1,792
D350-591-123	Heli-Access-Step™ LH	Short step, low gear. Air Cruiser float compatible. Price is per side	AS350	$1,792
D350-591-124	Heli-Access-Step™ RH	Short step, low gear. Air Cruiser float compatible. Price is per side	AS350	$1,792
D350-721-045	Maintenance Step LH	Install on Aft crosstube. Compatible with D350-721-041/-043 Lightweight Baskets. Price is per side	AS350/AS355	$555
D350-721-046	Maintenance Step RH	Install on Aft crosstube. Compatible with D350-721-041/-043 Lightweight Baskets. Price is per side	AS350/AS355	$555
D350-636-101	Toe Step	Mounts to Fwd end of skidtube. Recommended accessory for installation with Apical Floats. Compatible with D350-636-011/-012/-013/-014 DART Skidtubes. Compatible with 20707-100/-200 Apical Steps. Price is per side	AS350/AS355	$376

DART Aerospace





D350-721-045 (Shown)
D350-721-046 (Similar)



- Easy to install
- Easy to maintain
- Lightweight

D350-591-117A

Transport Canada

Transports Canada

1100-9700 Jasper Avenue
Edmonton, Alberta T5J 4E6

Your file / Votre reference
827

Our file / Notre reference
C-10-0716
SH09-38

November 19, 2010

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada, T2E 6R7

Dear Sirs:

SUBJECT: REVISION TO SUPPLEMENTAL TYPE CERTIFICATE NO. SH09-38 – ISSUE 2 DATED OCTOBER 21, 2010 – INSTALLATION OF QUICK RELEASE MAINTENANCE STEP; INSTALLATION OF MAINTENANCE PEG STEP; INSTALLATION OF FIXED CABIN STEP – EUROCOPTER AS350B, B1, B2, B3, BA, D, D1; EUROCOPTER FRANCE AS355E, F, F1, F2, N, NP ISSUED TO AERO DESIGN LTD.

This Supplemental Type Certificate (STC) is issued in response to your application. Included with the STC are documents bearing the original Transport Canada signatures.

The transfer of these documents in the name of another person requires a prior approval from the Minister in accordance with Canadian Aviation Regulations (CAR) 521.357.

To accomplish this modification, the requirements of CAR 561 apply if parts are manufactured.

Embodiment of this modification is considered to be a maintenance activity and the requirements of CAR 571.06(4) will apply.

An STC holder is required to report any service problem experienced with their product. Therefore, should you be come aware of any defect, malfunction or failure resulting from the design change, it is your responsibility to submit a Service Difficulty Report to Transport Canada in accordance with CAR Part V, Subpart 91. Other Obligations as a Design Approval Document Holder are contained in CAR 521, Division VIII.

Yours truly,

J. Staal

J. Staal
Aircraft Certification Engineering Technologist
Prairie and Northern Region
Phone: 780-495-5227
Facs: 780-495-7963

Encl.

Canada

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Fixed Cabin Step on Eurocopter AS350 & AS355 Series**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-20**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 827.92)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82705, 82706, 82709**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	**Design Approval Holder (DAH) ICA Reference Column 2**	**Applicant Means of Compliance Supplemental ICA Requirements Column 3**
A527.2 (a) Manual(s) *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA827.92, Rev. 2)
A527.2 (b) Practical arrangement *(b)* The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions.		
A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 thru 25-6
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-8
A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections *(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment *(e)* Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc *(f)* All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-9
A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Section 4 ✓

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** June 29. 2010

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: J. STAAL **Phone #** 780-495-5227 **Email:** jack.staal@tc.gc.ca **Mail Routing Symbol:** RAED

Signature: J. Staal **Date:** 21 October 2010 **NAPA Number** C-10-0716

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Quick Release Maintenance Step on Eurocopter AS350 & AS355 Series**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-20**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 827.91)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82701**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA827.91, Rev. 3)
A527.2 (b) Practical arrangement *(b)* The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions.		
A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 and 25-2
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-3
A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections *(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment *(e)* Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc *(f)* All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-4
A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Chapter 4 ✓

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** June 29. 2010

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: JACK STAAL **Phone #** 780-495-5227 **Email:** jack.staal@tc.gc.ca **Mail Routing Symbol:** RAED

Signature: J. Staal **Date:** 21 October 2010 **NAPA Number** C-10-0716

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Maintenance Peg Step on Eurocopter AS350 & AS355 Series**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-20**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 827.93)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82707**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA827.93, Rev. 2)
A527.2 (b) Practical arrangement *(b)* The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions.		
A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
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A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-3
A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
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A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Section 4 ✓

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** June 29. 2010

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: I. STAAL **Phone #** 780-495-5227 **Email:** jack.staal@tc.gc.ca **Mail Routing Symbol:** RAED

Signature: _____ **Date:** 21 OCTOBER 2010 **NAPA Number** C-10-0716

MODIFICATION APPROVAL REQUEST APPLICATION FORM

MOD827, Re

1. NAME AND ADDRESS OF APPLICANT:	2. IDENTIFICATION OF PRODUCT	
AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7	MAKE: Eurocopter	MODEL: AS350, AS355 All models
ALL CORRESPONDANCE TO: AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7	SERIAL No.: All Eligible	REGISTRATION: All Eligible

3. REQUEST FOR:

A.	SUPPLEMENTAL TYPE CERTIFICATE (STC)	☐	
B.	STC/STA REVISION	☒	STC/STA No. SH09-38 C-10-0716
C.	LIMITED SUPPLEMENTAL TYPE CERTIFICATE (LSTC)	☐	
D.	LIMITED STC/STA REVISION	☐	LSTC/LSTA No.
E.	F.A.A. SUPPLEMENTAL TYPE CERTIFICATE	☐	
F.	F.A.A. STC REVISION	☐	STC No.
G.	FAMILIARIZATION OF F.A.A. STC	☐	STC No.
H.	REPAIR DESIGN APPROVAL (RDC)	☐	
I.	PARTS DESIGN APPROVAL (PDA)	☐	

4. TITLE OF MODIFICATION OR REPAIR:

Step Installations

5. BRIEF DESCRIPTION OF MODIFICATION OR REPAIR:

Installation of various step products: Quick Release Maintenance Step; Peg Maintenance Step; Fixed Cabin Step. Revision is to update for new configurations.

6. APPLICABLE TYPE APPROVAL (TA) OR TYPE CERTIFICATE (TC) DOCUMENTS:

A. TA NO. H-83, H-87 B. TC No _____ C. OTHER _____

7. PROPOSED BASIS OF APPROVAL:

A. SAME AS TA ☒ B. SAME AS TC ☐ C. OTHER ☐ (Please specify) _____

8. DOCUMENTATION CHECKLIST	REQUIRED		FOR DOT USE ONLY RECEIVED		
	YES	NO	YES	NO	DAT
COMPLIANCE PROGRAM		X			
MASTER DRAWING LIST	X				
FLIGHT MANUAL SUPPLEMENT	X				
MAINTENANCE MANUAL SUPPLEMENT		X			
INSTRUCTIONS FOR CONTINUING AIRWORTHINESS	X				
ENGINEERING REPORTS	X				
DESIGN DRAWINGS		X			
MANUFACTURE DRAWINGS & INSTALLATION INSTRUCTIONS	X				
ELECTRICAL LOAD ANALYSIS		X			
DRAFT STC, LSTC OR RDA		X			
WEIGHT AND MOMENT CHANGE	X				
FLIGHT TEST DATA		X			
OTHER (Specify)					

9. APPLICANT'S REMARKS:

10. In addition to the payment of Aircraft Certification approval fees as prescribed in Canadian Aviation Regulations (CAR) Section 104, I agree to reimburse Transport Can incremental expenses as in Aviation Regulation Directive No. 3, or equivalent, as applicable. For further details governing cost recovery, refer to AMA 513/4.

PER: _____ Consultant 27 July, 2010

SIGNATURE OF APPLICANTS TITLE DATE

11.

_____ 2010 Sept 10

SIGNATURE OF REGIONAL ENGINEERING Tech DATE

Form MOD. 25 March, 2001

Transport Canada / Transports Canada
1100 - 9700 Jasper Av NW
Edmonton AB
T5J 4E6
www.tc.gc.ca

FACSIMILE TRANSMITTAL FORM

BORDEREAU DE TRANSMISSION POUR TÉLÉCOPIEUR

C-10-0716
827

Fax to: - Télécopier à :	
AERO DESIGN LTD CALGARY AB	
Fax number - Numéro de télécopieur	Telephone number - Numéro de téléphone
via speed dial	403-250-8027

From: - De :	Fax number - Numéro de télécopieur
Aircraft Certification - J. STAAL	780-495-7963

Comments: - Commentaires :

STC SH09-38, ISS 2. (1)
FMS (1)
DCL (5)
} signed

Above documents attached (faxed)

Number of pages including this sheet - Nombre de pages incluant celle-ci	Transmission date - Date de transmission
15	22 Oct 2010

For additional information, please contact me at: - Pour plus de renseignements, composer le :

780-495-5227 JS.

Canada

Transport Canada Transports Canada

Department of Transport

Supplemental Type Certificate

This approval is issued to:

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada T2E 6R7

Number: SH09-38
Issue No.: 2
Approval Date: August 07, 2009
Issue Date: October 21, 2010

Responsible Office: Prairie and Northern

Aircraft/Engine Type or Model: EUROCOPTER AS 350 B, AS 350 B1, AS 350 B2, AS 350 B3, AS 350 BA, AS 350 D, AS 350 D1, EUROCOPTER FRANCE AS 355 E, AS 355 F, AS 355 F1, AS 355 F2, AS 355 N, AS 355 NP

Canadian Type Certificate or Equivalent: EUROCOPTER AS 350: H-83
EUROCOPTER FRANCE AS 355: H-87

Description of Type Design Change: Installation of Quick Release Maintenance Step; Installation of Maintenance Peg Step; Installation of Fixed Cabin Step

Installation/Operating Data, Required Equipment and Limitations:

Configuration A – Quick Release Maintenance Step:

Installation of the External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is required for installation of the Quick Release Maintenance Step. Installation of the Quick Release Maintenance Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-1, Revision 4, dated 29 June 2010, or later approved revision.

External Attachment Provisions may remain installed if the Step Installation is removed.

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS827.90, Revision 2, dated 24 June 2010, or later approved revision is required with this installation.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.91, Revision 3, dated 28 June 2010, or later accepted revision is required with this installation.

.....2/

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

D.S. Austen
For Minister of Transport

Canada

Transport Canada Transport Canada

(Continuation Sheet)

Number: SH09-38 Issue 2

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

Configuration B – Maintenance Peg Step:
Installation of the External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is a prerequisite for installation of the Maintenance Peg Step. Installation of the Maintenance Peg Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-2, Revision 3, dated 29 June 2010, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.93, Revision 2, dated 28 June 2010, or later accepted revision is required with this installation.

Configuration C – Fixed Cabin Step:
Installation of the Fixed Cabin Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-3, Revision 4, dated 29 June 2010, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.92, Revision 2, dated 28 June 2010, or later accepted revision is required with this installation.

Data Pertinent to All Configurations:
Any combination of Configurations A, B, or C may be simultaneously installed.

Basis of Certification:
Basis of certification remains as specified in the applicable Type Certificate Data Sheets for affected airworthiness standards.

— End —

Canada

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82701	Quick Release Maintenance Step Installation	1
ICA827.91	Instructions for Continued Airworthiness	3
FMS827.90	Flight Manual Supplement	2
FABRICATION DOCUMENTS		
DCL827-11	Document Control List for Step Assembly	2

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By D S. Austen
Appr'l No. SH09-38
Appr'l Date 2009-08-07
Issue No. 2
Issue Date 2010-10-21
YY-MM-DD

ORIGINAL DATE:
31 October, 2008
REVISION DATE:
29 June 2010

AERO DESIGN LTD.
2013 – 39th Ave NE, Calgary, Alberta, T2E 6R7
Ph. (403) 250-8027
Fax. (403) 250-8333
www.aerodesign.ca

SHEET 1 OF 1

Eurocopter AS350 & AS355 Series Quick Release Maintenance Step Installation

DCL827-1

Rev. **4**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82716	Step Assembly	0
82722	Step End Fabrication	0
ENGINEERING DOCUMENTS		
ER827.02	Engineering Report	0

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By D. S. Austen
Appr'l No. SH09-38
Appr'l Date 2009-08-07
Issue No. 2
Issue Date 2010-10-21
YY-MM-DD

ORIGINAL DATE:
31 October, 2008
REVISION DATE:
29 June 2010

AERO DESIGN LTD.
2013 – 39th Ave NE, Calgary, Alberta, T2E 6R7
Ph. (403) 250-8027
Fax. (403) 250-8333
www.aerodesign.ca

SHEET 1 OF 1

Eurocopter AS350 & 355 Series Quick Release Maintenance Step Fabrication

DCL827-11

Rev. **2**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82707	Maintenance Peg Step Installation	1
ICA827.93	Instructions for Continued Airworthiness	2
FABRICATION DOCUMENTS		
82740	Step Assembly	1
ENGINEERING DOCUMENTS		
ER827.01	Engineering Report	2

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By D.S. Auste
Appr'l No. SH09-38
Appr'l Date 2009-08-07
Issue No. 2
Issue Date 2010-10-21
YY-MM-DD

ORIGINAL DATE:
7 November, 2008
REVISION DATE:
29 June 2010

AERO DESIGN LTD.
2013 – 39th Ave NE, Calgary, Alberta, T2E 6R7
Ph. (403) 250-8027
Fax. (403) 250-8333
www.aerodesign.ca

SHEET 1 OF 1

Eurocopter AS350 & AS355 Series Maintenance Peg Step Installation

DCL827-2

Rev. **3**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82705	Long Cabin Step Installation	1
82706	Short Cabin Step Installation	1
82709	Full Length Cabin Step Installation	0
82750	Short Commuter Cabin Step Installation	0
82751	Long Commuter Cabin Step Installation	0
82752	Full Length Commuter Cabin Step Installation	0
ICA827.92	Instructions for Continued Airworthiness	2
FABRICATION DOCUMENTS		
DCL827-13	Document Control List for Step Assembly	3

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By D. S. Austin
Appr'l No. SH09-38
Appr'l Date 2009-08-07
Issue No. 2
Issue Date 2010-10-21
YY-MM-DD

ORIGINAL DATE:
20 October, 2008
REVISION DATE:
29 June 2010

AERO DESIGN LTD.
2013 – 39th Ave NE, Calgary, Alberta, T2E 6R7
Ph. (403) 250-8027
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SHEET 1 OF 1

Eurocopter AS350 & AS355 Series Fixed Cabin Step Installation

DCL827-3

Rev. **4**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82715	Short Cabin Step Assembly	0
82717	Long Cabin Step Assembly	0
82718	Commuter Cabin Step Assembly	0
82723	Bracket Fabrication	0
82733	Short Cabin Step Parts Fabrication	0
82734	Cabin Step Parts Fabrication	0
82736	Commuter Cabin Step Parts Fabrication	0
82760	Commuter Step Assembly	0
82765	Bracket Fabrication	1
ENGINEERING DOCUMENTS		
ER827.02	Engineering Report	0

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By D.E. Austen
Appr'l No. SH09-38
Appr'l Date 2009-08-07
Issue No. 2
Issue Date 2010-10-21
WY-824-DO

ORIGINAL DATE:
20 October, 2006
REVISION DATE:
29 June 2010

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SHEET 1 OF 1

Eurocopter AS350 & 355 Series Fixed Cabin Step Fabrication

DCL827-13

Rev. **3**

AERO DESIGN LTD. FMS827.90

AS350 & AS355 SERIES HELICOPTERS

FLIGHT MANUAL SUPPLEMENT
for the
INSTALLATION of the AERO DESIGN QUICK RELEASE MAINTENANCE STEP

TCCA Supplemental Type Certificate No. SH09-38
FAA Supplemental Type Certificate No. SR02770NY

Sections I, II, III, IV, and V of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section II, Limitations, is mandatory. Section VI and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.



Table of Contents

I	General	3
II	Limitations	3
III	Emergency ProCedures	3
IV	Normal Procedures	3
V	Performance	3
VI	Installation / removal instructions	4
VII	Weight and Balance	6

Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	By
0	4 Aug 2009	None		
1	5 Jan 2010	1, 2, 4-8		
2	16 June 2010	1, 2, 4-7		

I GENERAL

No change.

II LIMITATIONS

No change.

III EMERGENCY PROCEDURES

No change.

IV NORMAL PROCEDURES

No change.

V PERFORMANCE

No change.

VI INSTALLATION / REMOVAL INSTRUCTIONS

The attachment provisions are installed in accordance with Supplemental Type Certificate SH08-16. The maintenance step is installed in accordance with drawing 82701.

There are three configurations approved for flight:
1) Step in the upper (normal) position or lower (stowed) position.
2) Step in the lower (stowed) position with a cargo basket installed.
3) Step removed, leaving the attachment provisions in place.

Logbook entry indicating installation or removal of step and which weight and balance amendment is in effect is required when step is installed or removed.

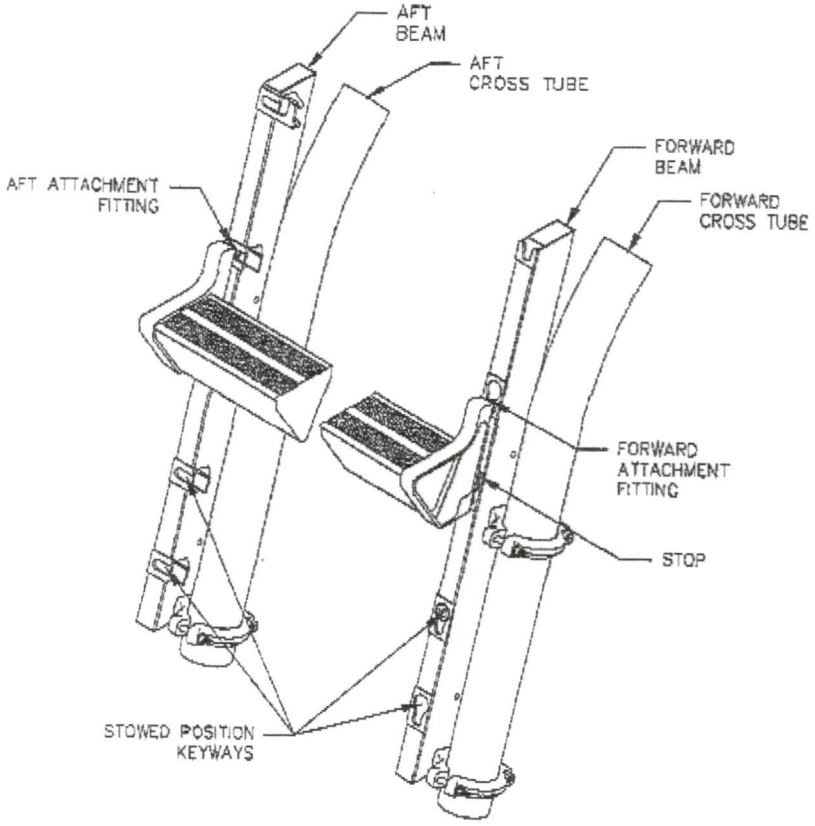


Figure 1 – Step Attachment Features

1. Installation - Refer to Figure 1.

   a) Slide step aft attachments fittings into keyways in aft beam.

   b) At forward end of step, lift step until lower attachment fitting hits stop.

   c) Push step attachment fittings into keyways and slide down until locked.

2. Removal - Refer to Figure 1.

   a) Pull knob on forward beam that is retaining step and lift step until forward attachment fittings are free of keyways.

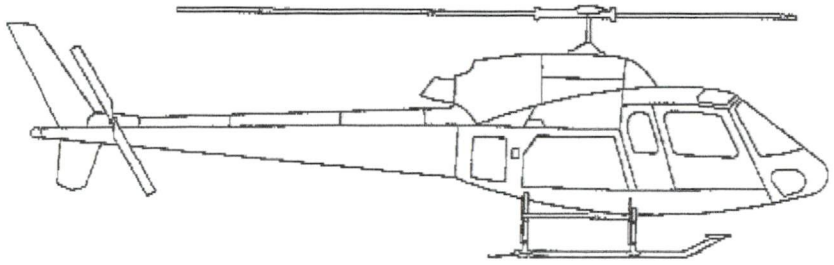
   b) Slide step forward until free of keyways on aft beam.

VII WEIGHT AND BALANCE

1. MAINTENANCE STEP 82701.

The following weight and balance is for the quick release maintenance step installed in accordance with drawing 82701. Upper (normal) and lower (stowed) positions are provided, either position is approved for flight.

Weight and balance is for Maintenance Step only. Refer to Flight Manual Supplement FMS764.91 for weight and balance for mounting provisions.



Quick Release Maintenance Step

Standard Units

Provisions Configuration	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
Right Hand						
High	Step	4.0	136.0	544.0	37.6	150.4
	Step (stowed)	4.0	136.0	544.0	40.3	161.2
Low	Step	4.0	136.0	544.0	38.3	153.2
	Step (stowed)	4.0	136.0	544.0	41.1	164.4
Eurocoper Pod	Step	4.0	136.0	544.0	40.3	161.2
Compatible	Step (stowed)	4.0	136.0	544.0	43.1	172.4
Left Hand						
High	Step	4.0	136.0	544.0	-37.6	-150.4
	Step (stowed)	4.0	136.0	544.0	-40.3	-161.2
Low	Step	4.0	136.0	544.0	-38.3	-153.2
	Step (stowed)	4.0	136.0	544.0	-41.1	-164.4
Eurocoper Pod	Step	4.0	136.0	544.0	-40.3	-161.2
Compatible	Step (stowed)	4.0	136.0	544.0	-43.1	-172.4

Metric Units

Provisions Configuration	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		Kg	mm	mm-Kg	mm	mm-Kg
Right Hand						
Low	Step	1.8	3454	6252	973	1751
	Step (stowed)	1.8	3454	6252	1044	1890
High	Step	1.8	3454	6252	955	1729
	Step (stowed)	1.8	3454	6252	1024	1853
Eurocoper Pod	Step	1.8	3454	6252	1024	1853
Compatible	Step (stowed)	1.8	3454	6252	1095	1981
Left Hand						
Low	Step	1.8	3454	6252	-973	-1751
	Step (stowed)	1.8	3454	6252	-1044	-1890
High	Step	1.8	3454	6252	-955	-1729
	Step (stowed)	1.8	3454	6252	-1024	-1853
Eurocoper Pod	Step	1.8	3454	6252	-1024	-1853
Compatible	Step (stowed)	1.8	3454	6252	-1095	-1981

Department of Transport

Supplemental Type Certificate

This approval is issued to:

AERO Design Ltd.
2013 39th Avenue NE
Calgary, Alberta
Canada T2E 6R7

DRAFT

Number: SH09-38
Issue No.: 2
Approval Date: 07 August 2009
Issue Date:

Responsible Office:	Prairie and Northern
Aircraft/Engine Type or Model:	Eurocopter AS350 B, B1, B2, B3, BA, D, D1 Eurocopter AS355 E, F, F1, F2, N, NP
Registration/Serial No.:	All eligible
Canadian Type Certificate or Equivalent:	H-83 (AS350 series), H-87 (AS355 Series)
Description of Type Design Change:	Installation of Quick Release Maintenance Step; Installation of Maintenance Peg Step; Installation of Fixed Cabin Step

Installation/Operating Data, Required Equipment and Limitations:

Configuration A – Quick Release Maintenance Step:
Installation of the External Attachment Provisions in accordance with STC SH08-16 (Configuration A) is a prerequisite for installation of Configuration A, Quick Release Maintenance Step Installation. Installation of the Quick Release Maintenance Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-1, Revision 4, dated 29 June 2010, or later approved revision.

External Attachment Provisions may remain installed if the Step Installation is removed.

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS764.91, Revision 2, dated 24 June 2010, or later approved revision is required with this installation.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.91, Revision 3, dated 28 June, 2010, or later accepted revision is required with this installation.

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

For Minister of Transport

Configuration B – Maintenance Peg Step:
Installation of the Maintenance Peg Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-2, Revision 3, dated 29 June 2010, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.93, Revision 2, dated 28 June, 2010, or later accepted revision is required with this installation.

Configuration C – Fixed Cabin Step:
Installation of the Fixed Cabin Step to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL827-3, Revision 4, dated 29 June 2010, or later approved revision.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA827.92, Revision 2, dated 28 June, 2010, or later accepted revision is required with this installation.

Data Pertinent to All Configurations:
Any combination of Configurations A, B, or C may be simultaneously installed.

Basis of Certification:
Basis of certification remains as defined in the applicable Type Certificate Data Sheets.

– End –

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82715	Short Cabin Step Assembly	0
82717	Long Cabin Step Assembly	0
82718	Commuter Cabin Step Assembly	0
82723	Bracket Fabrication	0
82733	Short Cabin Step Parts Fabrication	0
82734	Cabin Step Parts Fabrication	0
82736	Commuter Cabin Step Parts Fabrication	0
82760	Commuter Step Assembly	0
82765	Bracket Fabrication	1
ENGINEERING DOCUMENTS		
ER827.02	Engineering Report	0

APPROVAL:

ORIGINAL DATE:

20 October, 2008

REVISION DATE:

29 June 2010

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SHEET 1 OF 1

Eurocopter AS350 & 355 Series Fixed Cabin Step Fabrication

DCL827-13

Rev. **3**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82705	Long Cabin Step Installation	1
82706	Short Cabin Step Installation	1
82709	Full Length Cabin Step Installation	0
82750	Short Commuter Cabin Step Installation	0
82751	Long Commuter Cabin Step Installation	0
82752	Full Length Commuter Cabin Step Installation	0
ICA827.92	Instructions for Continued Airworthiness	2
FABRICATION DOCUMENTS		
DCL827-13	Document Control List for Step Assembly	3

APPROVAL:

ORIGINAL DATE:
20 October, 2008
REVISION DATE:
29 June 2010

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SHEET 1 OF 1

Eurocopter AS350 & AS355 Series Fixed Cabin Step Installation

DCL827-3

Rev. **4**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82701	Quick Release Maintenance Step Installation	1
ICA827.91	Instructions for Continued Airworthiness	3
FMS827.90	Flight Manual Supplement	2
FABRICATION DOCUMENTS		
DCL827-11	Document Control List for Step Assembly	2

APPROVAL:

ORIGINAL DATE:
31 October, 2008
REVISION DATE:
29 June 2010

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SHEET 1 OF 1

Eurocopter AS350 & AS355 Series Quick Release Maintenance Step Installation

DCL827-1

Rev. **4**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82716	Step Assembly	0
82722	Step End Fabrication	0
ENGINEERING DOCUMENTS		
ER827.02	Engineering Report	0

APPROVAL:

ORIGINAL DATE:
31 October, 2008
REVISION DATE:
29 June 2010

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SHEET 1 OF 1

Eurocopter AS350 & 355 Series Quick Release Maintenance Step Fabrication

DCL827-11

Rev. **2**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82707	Maintenance Peg Step Installation	1
ICA827.93	Instructions for Continued Airworthiness	2
FABRICATION DOCUMENTS		
82740	Step Assembly	1
ENGINEERING DOCUMENTS		
ER827.01	Engineering Report	2

APPROVAL:

ORIGINAL DATE:
7 November, 2008
REVISION DATE:
29 June 2010

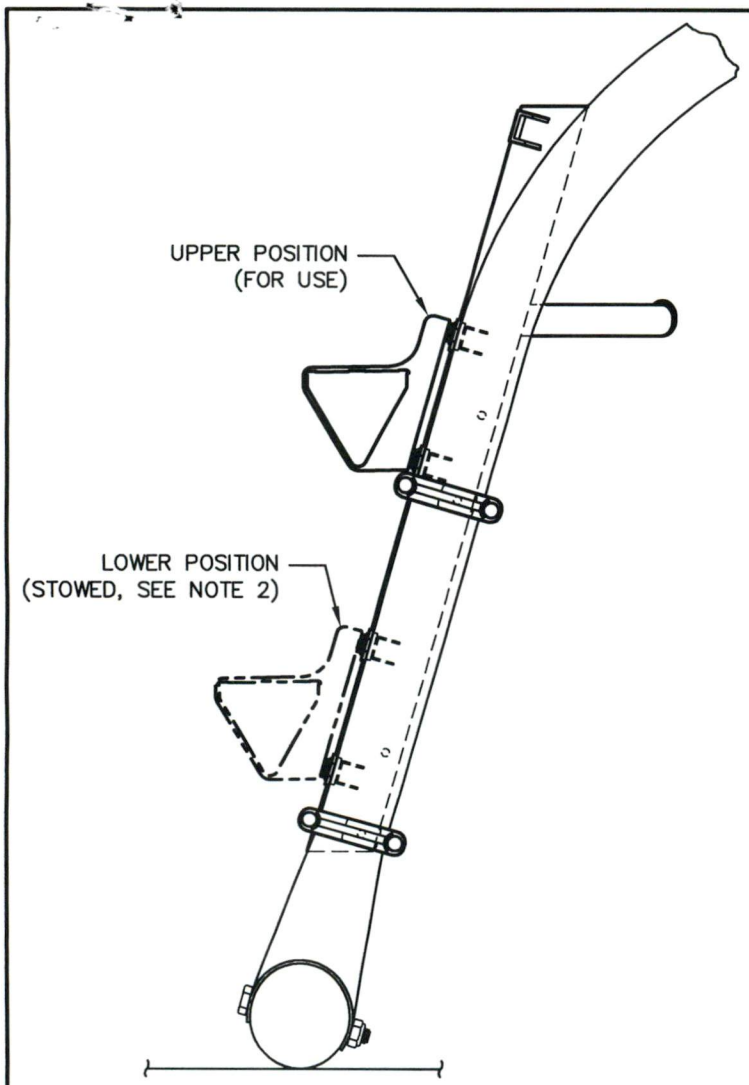
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SHEET 1 OF 1

Eurocopter AS350 & AS355 Series Maintenance Peg Step Installation

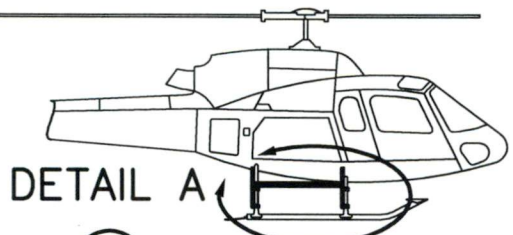
DCL827-2

Rev. **3**



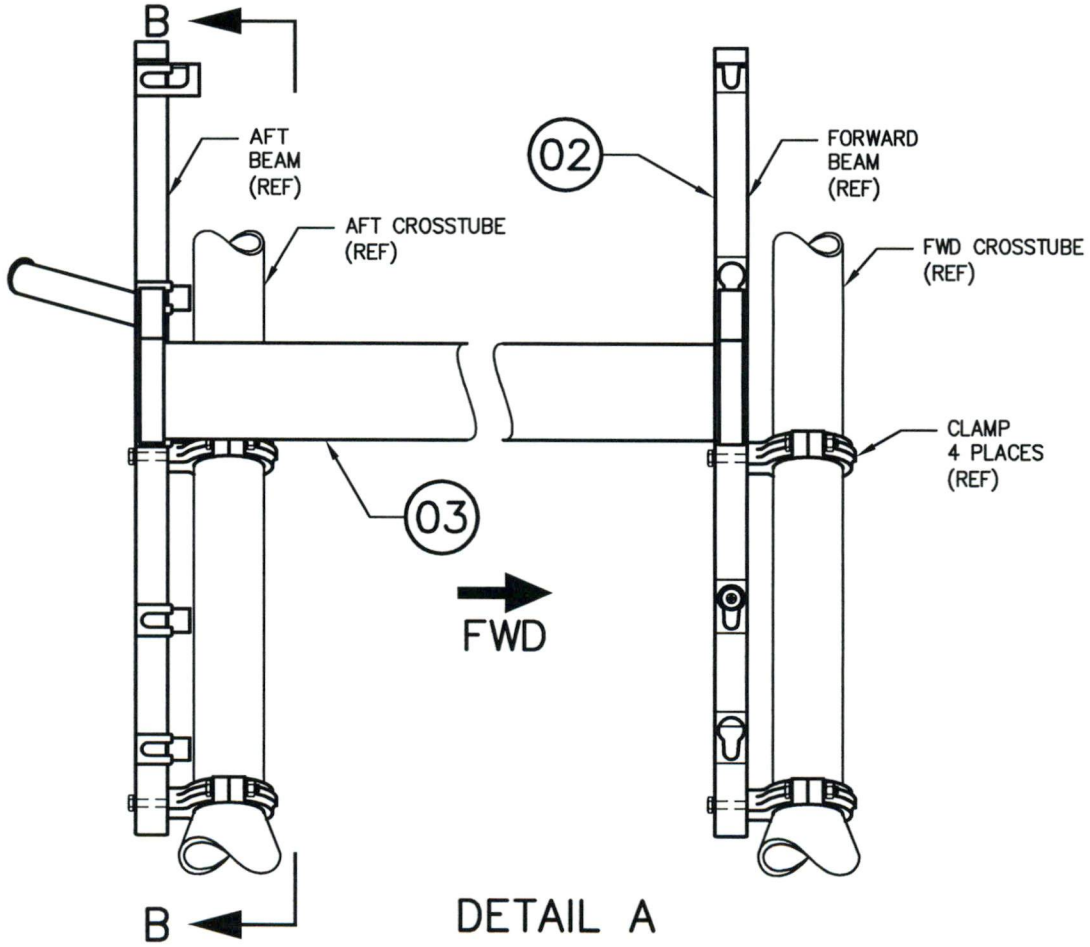
VIEW B–B

LOOKING AFT AT AFT CROSS TUBE



(01) INSTALLATION

NOT TO SCALE



DETAIL A

LOOKING INBOARD AT RIGHT SIDE
HIGH MOUNTING PROVISIONS (78602–02–01) SHOWN

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 OCT 2008
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES QUICK RELEASE MAINTENANCE STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 2	A4	82701	1

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REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE – RESIZED TO LETTER	BJC	22/07/09
1	CHANGE STEP PROFILE, ALL CONFIG ON THIS DWG.	BJC	23/04/10

NOTES

1. INSTALLATION OF EXTERNAL ATTACHMENT PROVISIONS IN ACCORDANCE WITH CANADIAN STC SH08–16 IS A MANDATORY PREREQUISITE TO THIS INSTALLATION. INSTALLATION ON THE RIGHT AND/OR LEFT SIDE IS APPROVED. REFER TO INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA827.91 FOR WEIGHT AND BALANCE INFORMATION.

2. FOR EXTERNAL ATTACHMENT PROVISIONS INSTALLATIONS THAT INCLUDE A SECOND, LOWER MOUNTING POSITION FOR STOWING THE STEP: THE STEP MAY BE INSTALLED IN THE UPPER OR LOWER POSITION FOR FLIGHT. INSTALLATION IN THE LOWER POSITION IS REQUIRED WHEN A CARGO BASKET IS TO BE INSTALLED IN ACCORDANCE WITH STC SH08–16 AT THE SAME TIME.

3. THE STEP ASSEMBLY MAY BE REMOVED FROM THE HELICOPTER AND STORED, LEAVING THE ATTACHMENT PROVISIONS IN PLACE. NOTE WEIGHT AND BALANCE CHANGE IN ACCORDANCE WITH ICA827.91.

QTY	PART NO.	ITEM	DESCRIPTION
1	82716–01	03	STEP ASSEMBLY (SHOWN)
REF	7860X–XX	02	MOUNTING PROVISIONS INST'N
	82701–01	01	MAINTENANCE STEP INSTALLATION

LIST OF MATERIALS

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 OCT 2008
CHECKED: E. BURGOIN	

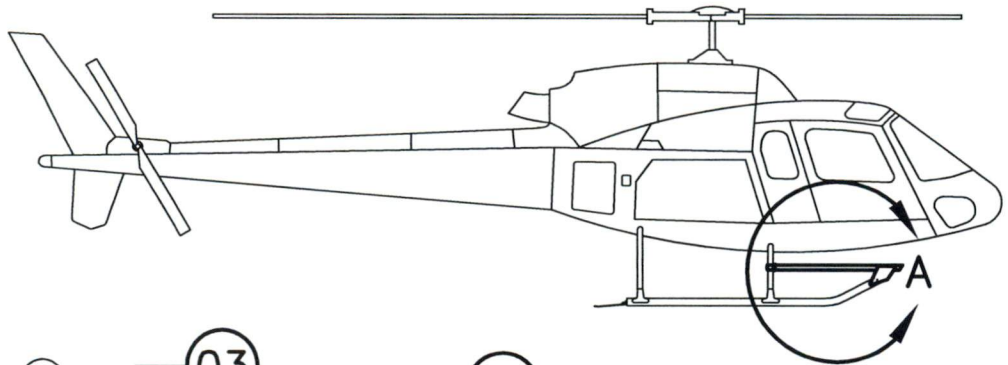
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TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

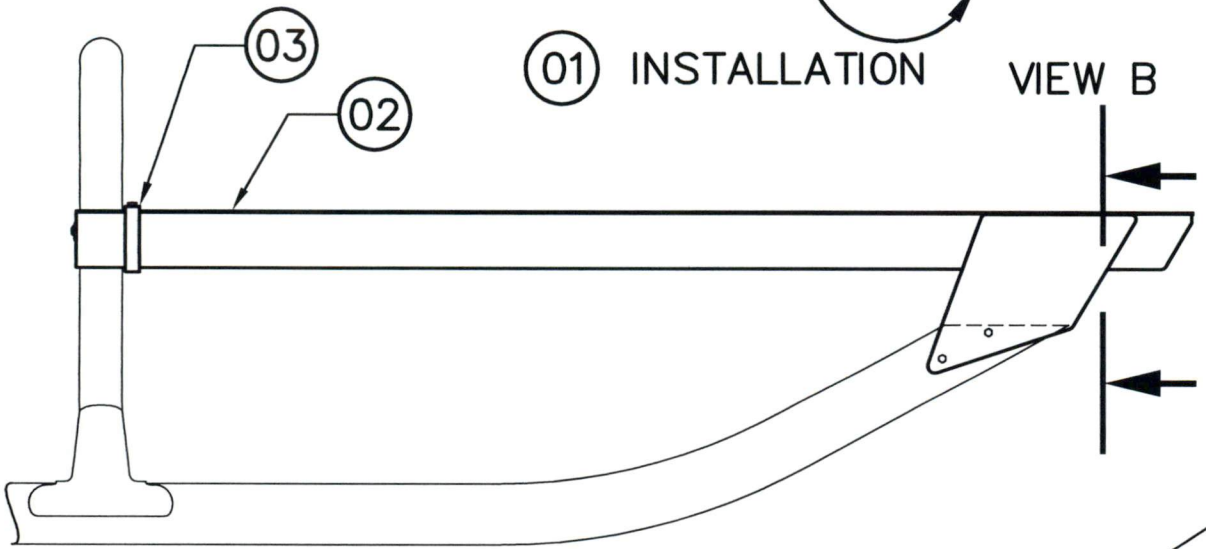
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EUROCOPTER AS350 & AS355 SERIES QUICK RELEASE MAINTENANCE STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 2	A4	82701	1



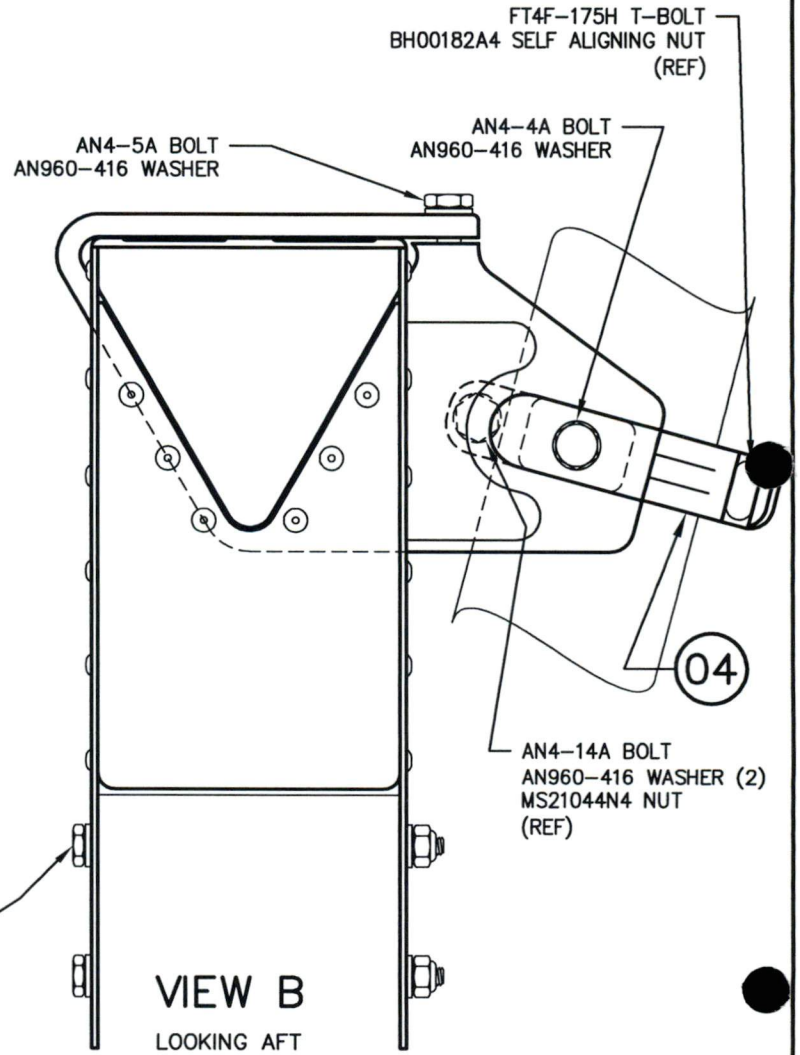
01 INSTALLATION



DETAIL A

LOOKING INBOARD AT RIGHT SIDE, LEFT SIDE OPPOSITE

VIEW B



VIEW B

LOOKING AFT

01	PART NO.	ITEM	DESCRIPTION
2	MS21044N3		NUT
4	AN960-10		WASHER
2	AN3-35A		BOLT
2	AN960-416		WASHER
1	AN4-5A		BOLT
1	AN4-4A		BOLT
1	78620-01	04	CLAMP ASSEMBLY
1	82723-01	03	BRACKET
1	82717-01	02	STEP ASSEMBLY
	82705-01	01	INSTALLATION

QTY — LIST OF MATERIALS

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 OCT 2008
CHECKED: E. BURGOIN	

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TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
LONG STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 1 OF 2	A4	82705	1	

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
1	CHANGE TO NEW STEP EXTRUSION AND PARTS	BJC	23/04/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 50 – 70 INCH–POUNDS.

3. THIS INSTALLATION IS NOT COMPATIBLE WITH AERO DESIGN LTD. LONG QUICK RELEASE CARGO BASKET INSTALLATION IN ACCORDANCE WITH STC SH08–16, DRAWING 78401. THIS INSTALLATION MAY BE APPLIED TO THE OPPOSITE SIDE OF THE HELICOPTER WHEN THE LONG QUICK RELEASE CARGO BASKET IS INSTALLED.

   ALL OTHER AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS ARE COMPATIBLE WITH THIS INSTALLATION.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	LONG STEP INSTALLATION	2.3	1935	4378	1000	2260

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	LONG STEP INSTALLATION	5.0	76.2	381.0	39.4	197.0

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APPROVALS	DATE
DRAWN: JEFF CLARKE	20 OCT 2008
CHECKED: E. BURGOIN	

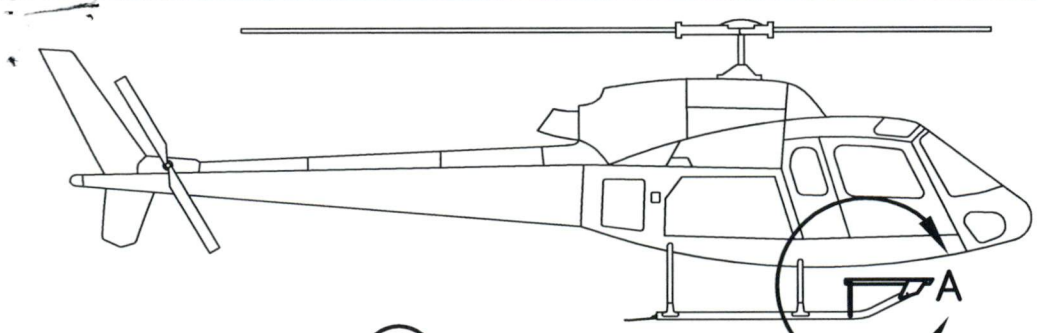
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TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

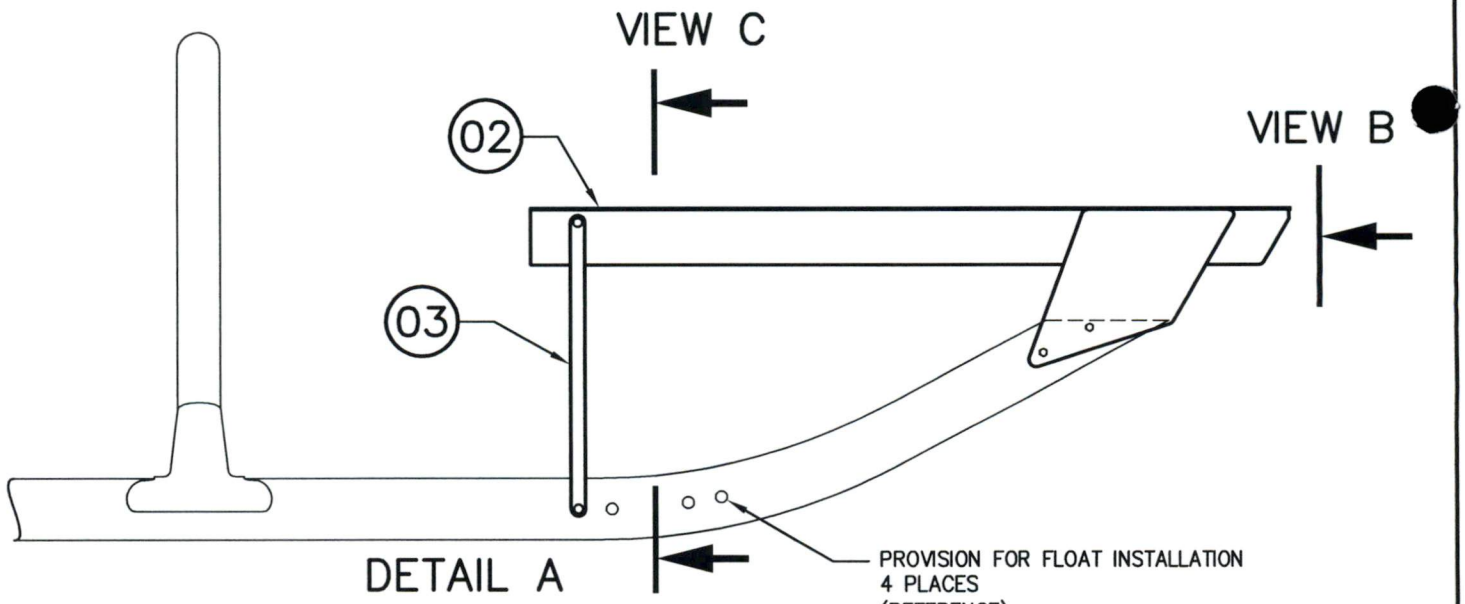
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tel: (403) 250–8027 fax: (403) 250–8333 www.aerodesign.ca

EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
LONG STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 2	A4	82705	1



(01) INSTALLATION



DETAIL A

LOOKING INBOARD AT RIGHT SIDE, LEFT SIDE OPPOSITE

QTY	PART NO.	ITEM	DESCRIPTION
01	82706-01	01	INSTALLATION
1	82715-01	02	STEP ASSEMBLY
1	82733-01	03	BRACKET
1	82733-02	04	BUSHING
2	AN4-42A		BOLT
4	AN960-416		WASHER
2	MS21044N4		NUT
2	AN3-35A		BOLT
4	AN960-10		WASHER
2	MS21044N3		NUT

LIST OF MATERIALS

APPROVALS	DATE
DRAWN: JEFF CLARKE	16 JULY 2009
CHECKED: E. BURGOIN	

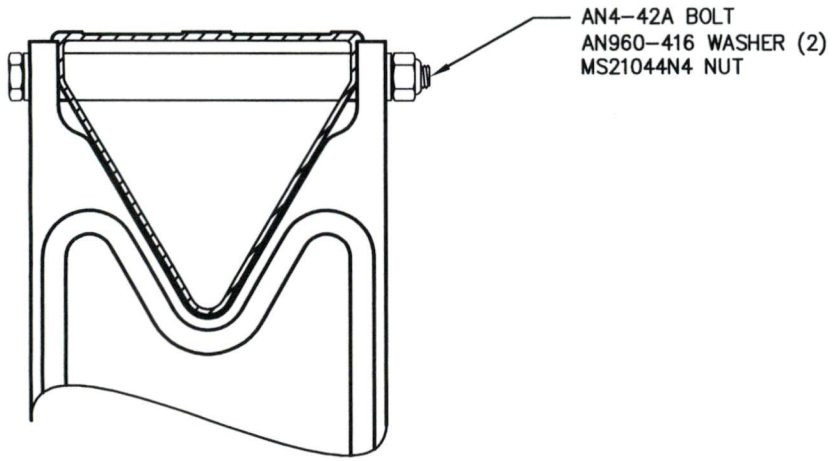
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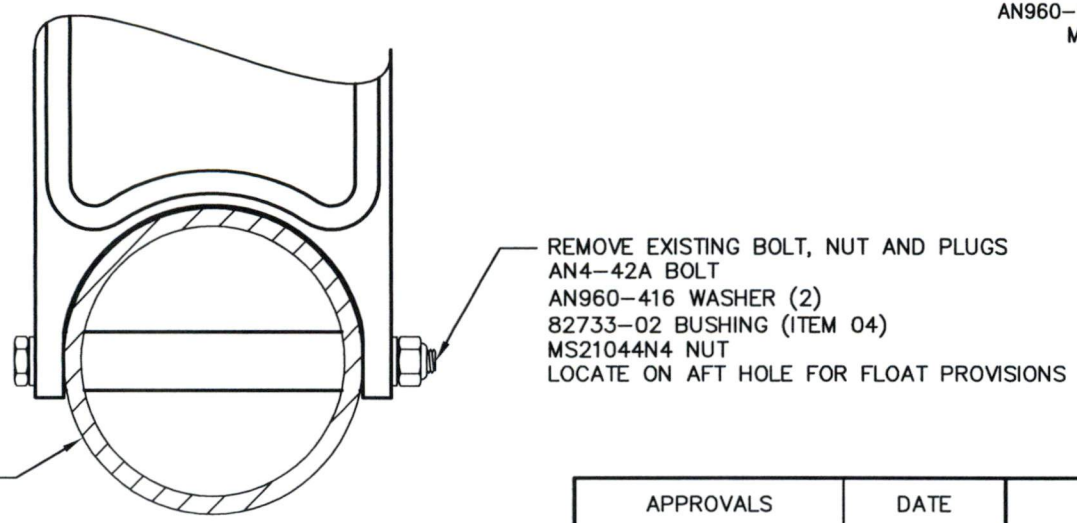
DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
SHORT STEP INSTALLATION

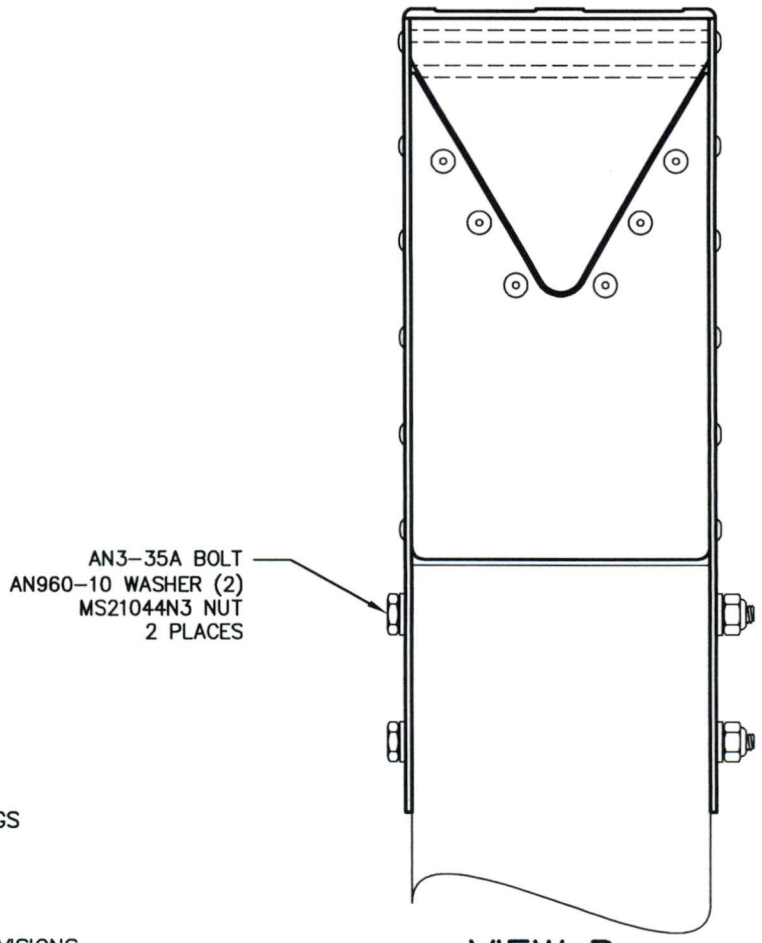
NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 3	A4	82706	1





VIEW C

LOOKING AFT
THROUGH STEP AND SKID TUBE



VIEW B

LOOKING AFT

APPROVALS	DATE
DRAWN: JEFF CLARKE	16 JULY 2009
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
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SHORT STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 3	A4	82706	1

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
1	CHANGE STEP PROFILE	BJC	APR 30/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 50 – 70 INCH–POUNDS.

3. THIS INSTALLATION IS COMPATIBLE WITH ALL AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS IN. ACCORDANCE WITH STC SH08–16.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	SHORT STEP INSTALLATION	1.9	1755	3335	1000	1900

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	SHORT STEP INSTALLATION	4.2	69.1	290.2	39.4	165.5

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APPROVALS	DATE
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CHECKED: E. BURGOIN	

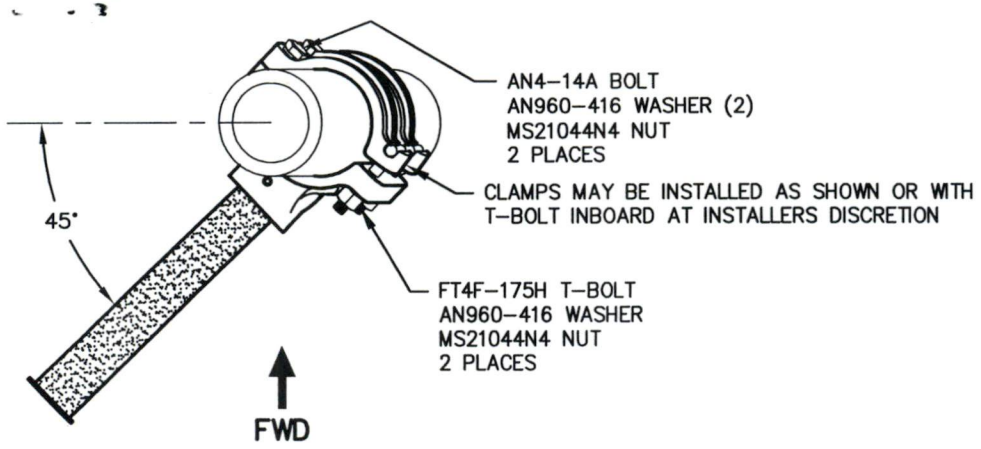
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TOLERANCES ON:

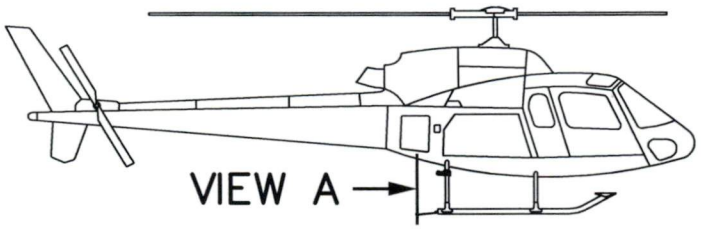
DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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SHORT STEP INSTALLATION

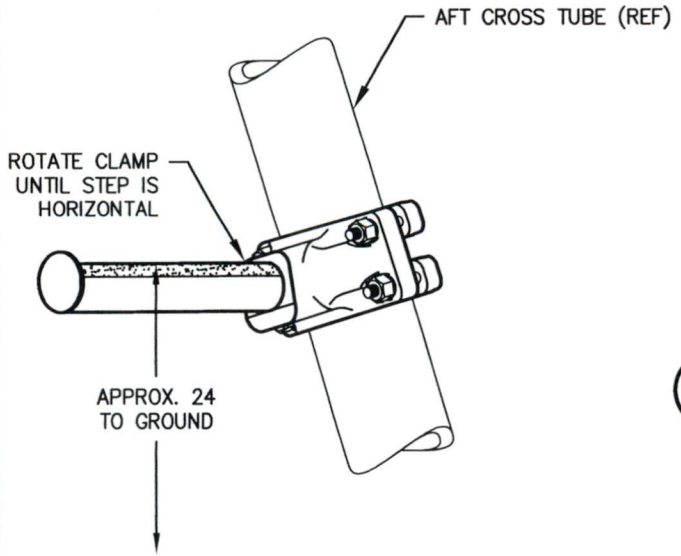
NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	82706	1





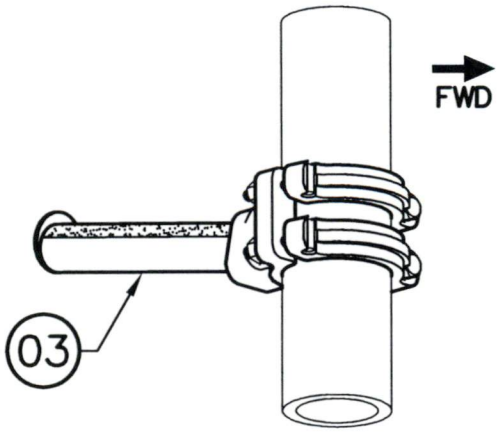
01 INSTALLATION

NOT TO SCALE
RIGHT SIDE SHOW, LEFT SIDE OPPOSITE



VIEW A

LOOKING FORWARD AT AFT CROSS TUBE



APPROVALS	DATE
DRAWN: JEFF CLARKE	16 DEC 2009
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
MAINTENANCE STEP INSTALLATION
PEG STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 2	A4	82707	1

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE	BJC	NOV 06/08
1	CHANGED TO 2 CLAMP ARRANGEMENT	BJC	MAY 25/10

NOTES

1. INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDE.
2. THIS INSTALLATION IS NOT COMPATIBLE WITH THE AERO DESIGN LTD. ATTACHMENT PROVISIONS INSTALLED IN ACCORDANCE WITH STC SH08-16, DRAWING 78601 OR 78602. THIS INSTALLATION MAY BE APPLIED TO THE OPPOSITE SIDE OF THE HELICOPTER WHEN THE ATTACHMENT PROVISIONS ARE INSTALLED.
3. TORQUE MS21044N4 NUTS TO 50-70 INCH-POUNDS.

WEIGHT AND BALANCE - METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (MM-KG)	LATERAL ARM (MM)	LATERAL MOMENT (MM-KG)
01	PEG STEP INSTALLATION (RIGHT)	0.45	4160.5	1872.2	825.5	371.5
01	PEG STEP INSTALLATION (LEFT)	0.45	4160.5	1872.2	-825.5	-371.5

WEIGHT AND BALANCE - STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB-IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB-IN)
01	PEG STEP INSTALLATION (RIGHT)	1.0	163.8	163.8	32.5	32.5
01	PEG STEP INSTALLATION (LEFT)	1.0	163.8	163.8	-32.5	-32.5

QTY	PART NO.	ITEM	DESCRIPTION
4	MS21044N4		NUT
6	AN960-416		WASHER
2	AN4-14A		BOLT
2	FT4F-175H		T-BOLT
1	82740-01	02	STEP ASSEMBLY
	82707-01	01	PEG STEP INSTALLATION

LIST OF MATERIALS

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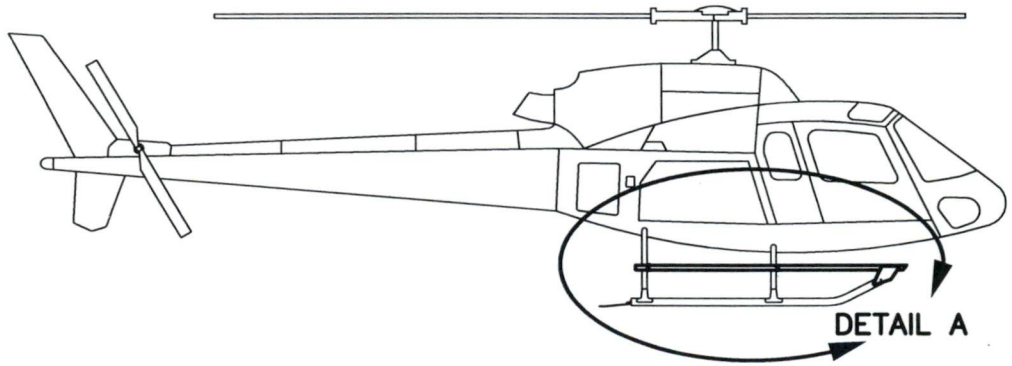
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TOLERANCES ON:

DECIMALS	ANGLES
X.XXX ±0.010	±1/2°
X.XX ±0.03	
X.X ±0.1	

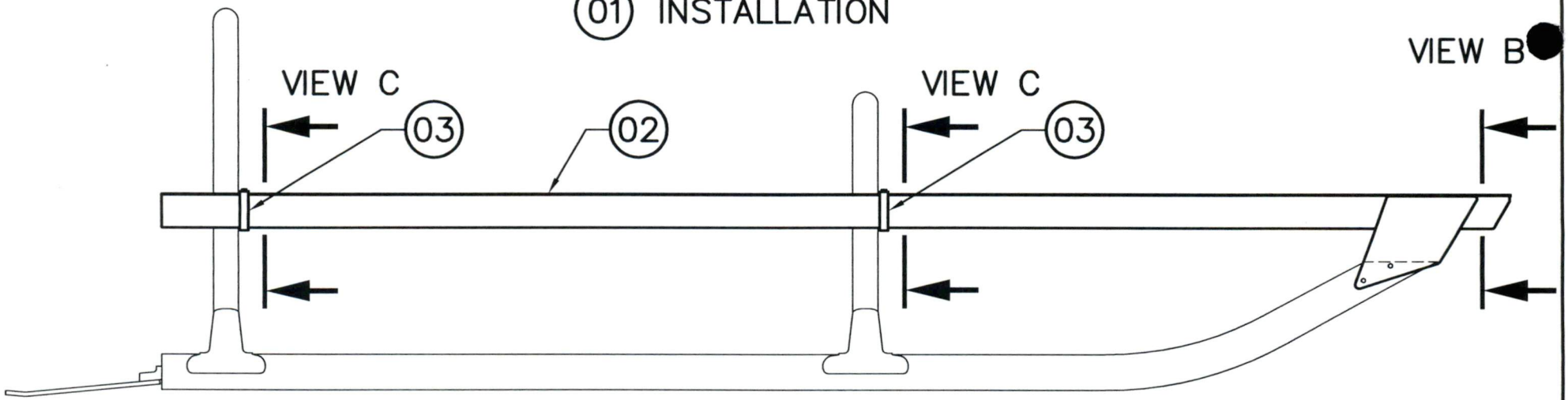
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EUROCOPTER AS350 & AS355 SERIES
MAINTENANCE STEP INSTALLATION
PEG STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 2	A4	82707	1



(01) INSTALLATION



DETAIL A

LOOKING INBOARD AT RIGHT SIDE, LEFT SIDE OPPOSITE

QTY	PART NO.	ITEM	DESCRIPTION
	LIST OF MATERIALS		
01	82709-01	01	INSTALLATION
1	82717-02	02	STEP ASSEMBLY
2	82723-01	03	BRACKET
2	78620-01	04	CLAMP ASSEMBLY
2	AN4-4A		BOLT
2	AN4-5A		BOLT
4	AN960-416		WASHER
2	AN3-36A		BOLT
4	AN960-10		WASHER
2	MS21044N3		NUT

APPROVALS	DATE
DRAWN: JEFF CLARKE	18 JUNE 2010
CHECKED: E. BURGOIN	

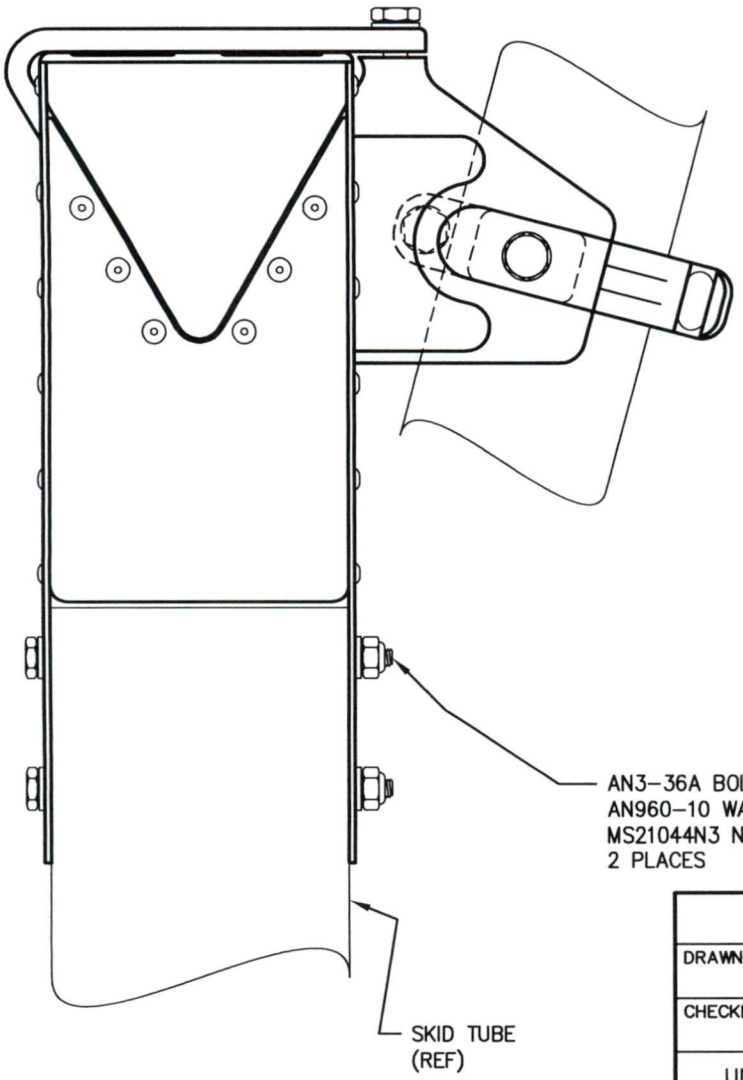
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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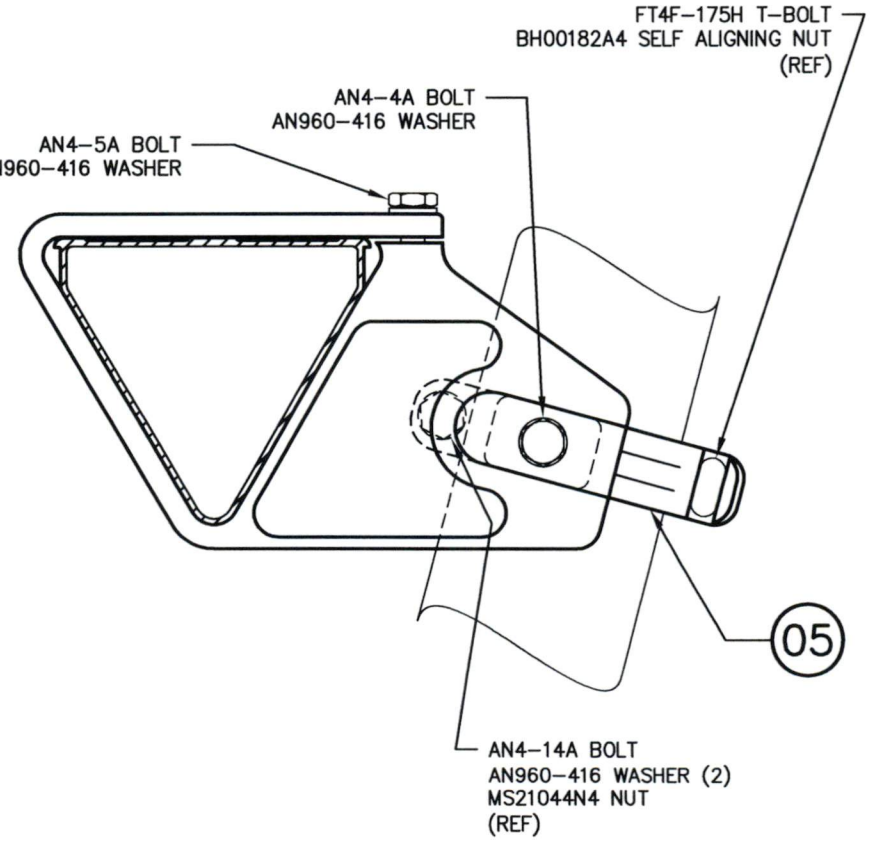
EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 3	A4	82709	0



VIEW B

LOOKING AFT



VIEW C

LOOKING AFT AT AFT CROSS TUBE ATTACHMENT

APPROVALS	DATE
DRAWN: JEFF CLARKE	18 JUNE 2010
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 2 OF 3	A4	82709	0	

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
1	CHANGE TO NEW STEP EXTRUSION AND PARTS	BJC	23/04/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 30 – 40 INCH–POUNDS.

3. THIS INSTALLATION IS NOT COMPATIBLE WITH AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS IN ACCORDANCE WITH STC SH08–16. THIS INSTALLATION MAY BE APPLIED TO THE OPPOSITE SIDE OF THE HELICOPTER WHEN A QUICK RELEASE CARGO BASKET IS INSTALLED.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	FULL LENGTH STEP INSTALLATION	4.4	2741	12155	1000	4434

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	FULL LENGTH STEP INSTALLATION	9.8	107.9	1057.4	39.4	386.1

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APPROVALS	DATE
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CHECKED: E. BURGOIN	

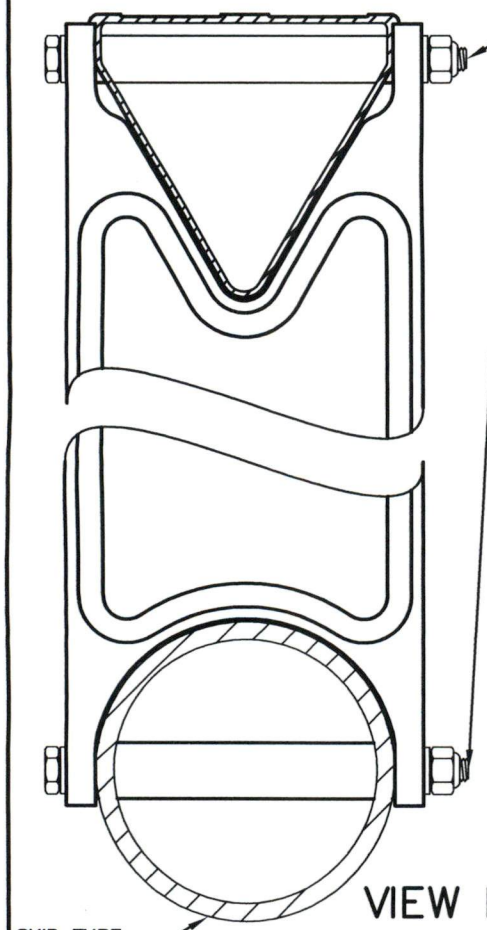
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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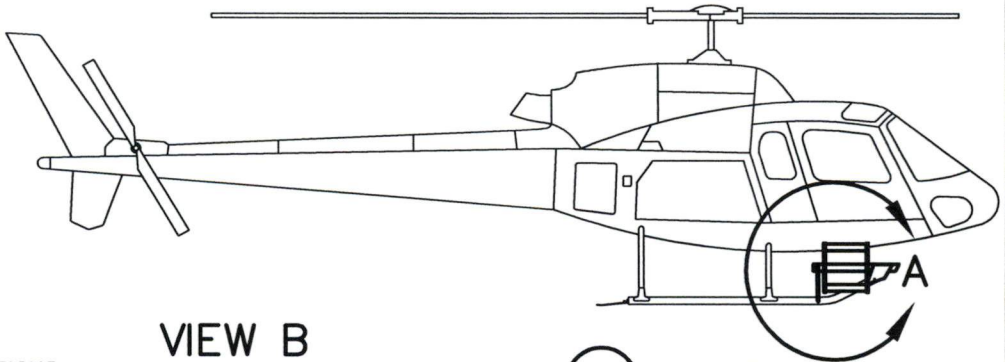
EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	82709	0

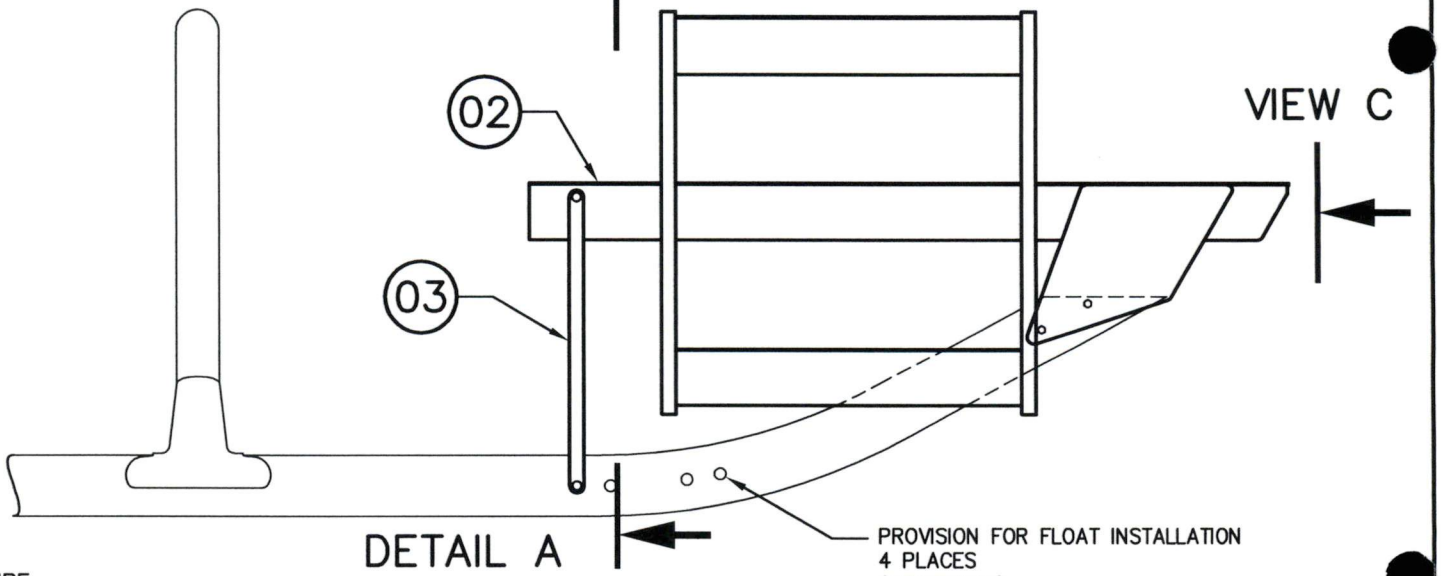


VIEW B

LOOKING AFT THROUGH STEP AND SKID TUBE



01 INSTALLATION



DETAIL A

LOOKING INBOARD AT RIGHT SIDE, LEFT SIDE OPPOSITE

-02	-01	PART NO.	ITEM	DESCRIPTION
2	2	MS21044N3		NUT
4	4	AN960-10		WASHER
2	2	AN3-35A		BOLT
2	2	MS21044N4		NUT
4	4	AN960-416		WASHER
2	2	AN4-42A		BOLT
1	1	82733-02	04	BUSHING
1	1	82733-01	03	BRACKET
1		82718-01-02	02	LEFT HAND STEP ASSEMBLY
	1	82718-01-01	02	RIGHT HAND STEP ASSEMBLY
		82750-01-02	01	LEFT HAND INSTALLATION
		82750-01-01	01	RIGHT HAND INSTALLATION
QTY	QTY	LIST OF MATERIALS		

APPROVALS		DATE
DRAWN:	JEFF CLARKE	20 JULY 2010
CHECKED:	E. BURGOIN	

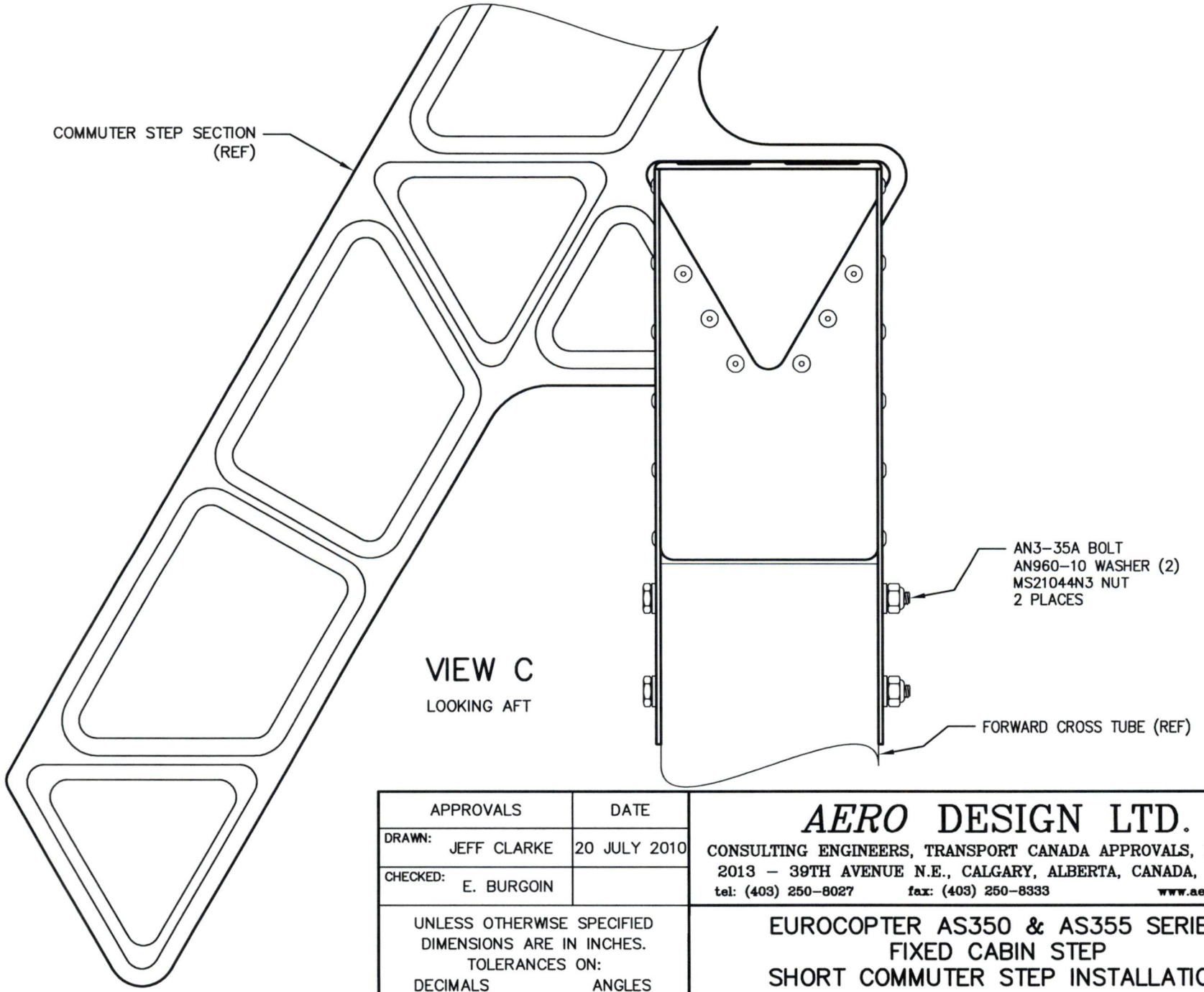
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
SHORT COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 1 OF 3	A4	82750	0	



VIEW C

LOOKING AFT

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
SHORT COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 2 OF 3	A4	82750	0	

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	CREATED FROM 82706, REV. 1	BJC	JULY 20/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 50 – 70 INCH–POUNDS.

3. THIS INSTALLATION IS COMPATIBLE WITH ALL AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS IN ACCORDANCE WITH STC SH08–16.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	SHORT COMMUTER STEP INSTALLATION	5.5	1795	9910	1064	5874

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	SHORT COMMUTER STEP INSTALLATION	12.2	70.7	862.2	41.9	511.1

-- NOTICE --
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APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

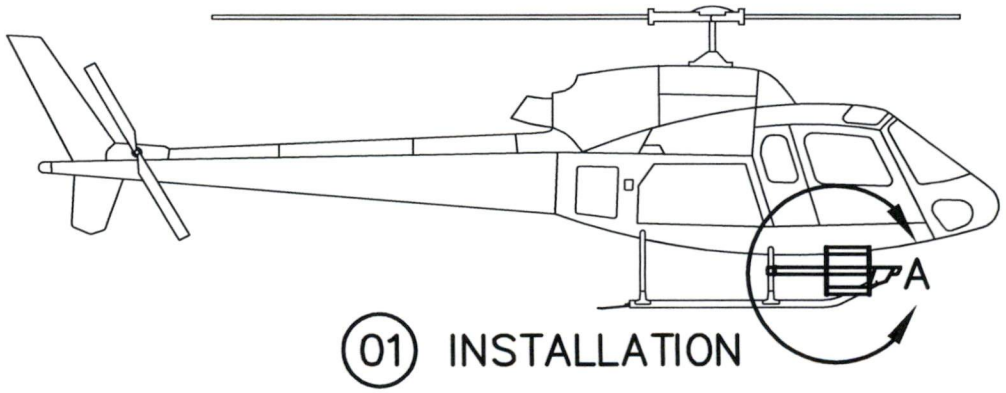
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
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X.XX	±0.03	
X.X	±0.1	

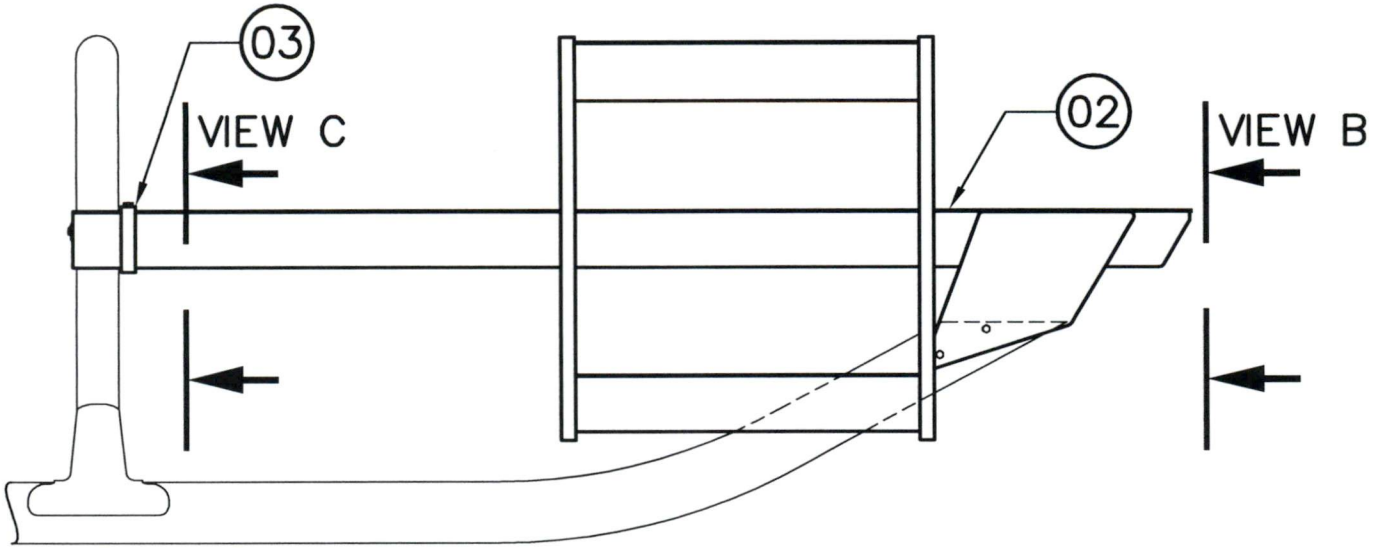
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tel: (403) 250–8027 fax: (403) 250–8333 www.aerodesign.ca

EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
SHORT COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	82750	0



01 INSTALLATION



DETAIL A

LOOKING INBOARD AT RIGHT SIDE, LEFT SIDE OPPOSITE

-02	-01	PART NO.	ITEM	DESCRIPTION
QTY	QTY	LIST OF MATERIALS		
2	2	MS21044N3		NUT
4	4	AN960-10		WASHER
2	2	AN3-35A		BOLT
2	2	AN960-416		WASHER
1	1	AN4-5A		BOLT
1	1	AN4-4A		BOLT
1	1	78620-01	04	CLAMP ASSEMBLY
1	1	82723-01	03	BRACKET
1		82718-02-02	02	STEP ASSEMBLY (RH)
	1	82718-02-01	02	STEP ASSEMBLY (RH)
\		82751-01-02	01	LEFT HAND INSTALLATION
	\	82751-01-01	01	RIGHT HAND INSTALLATION

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

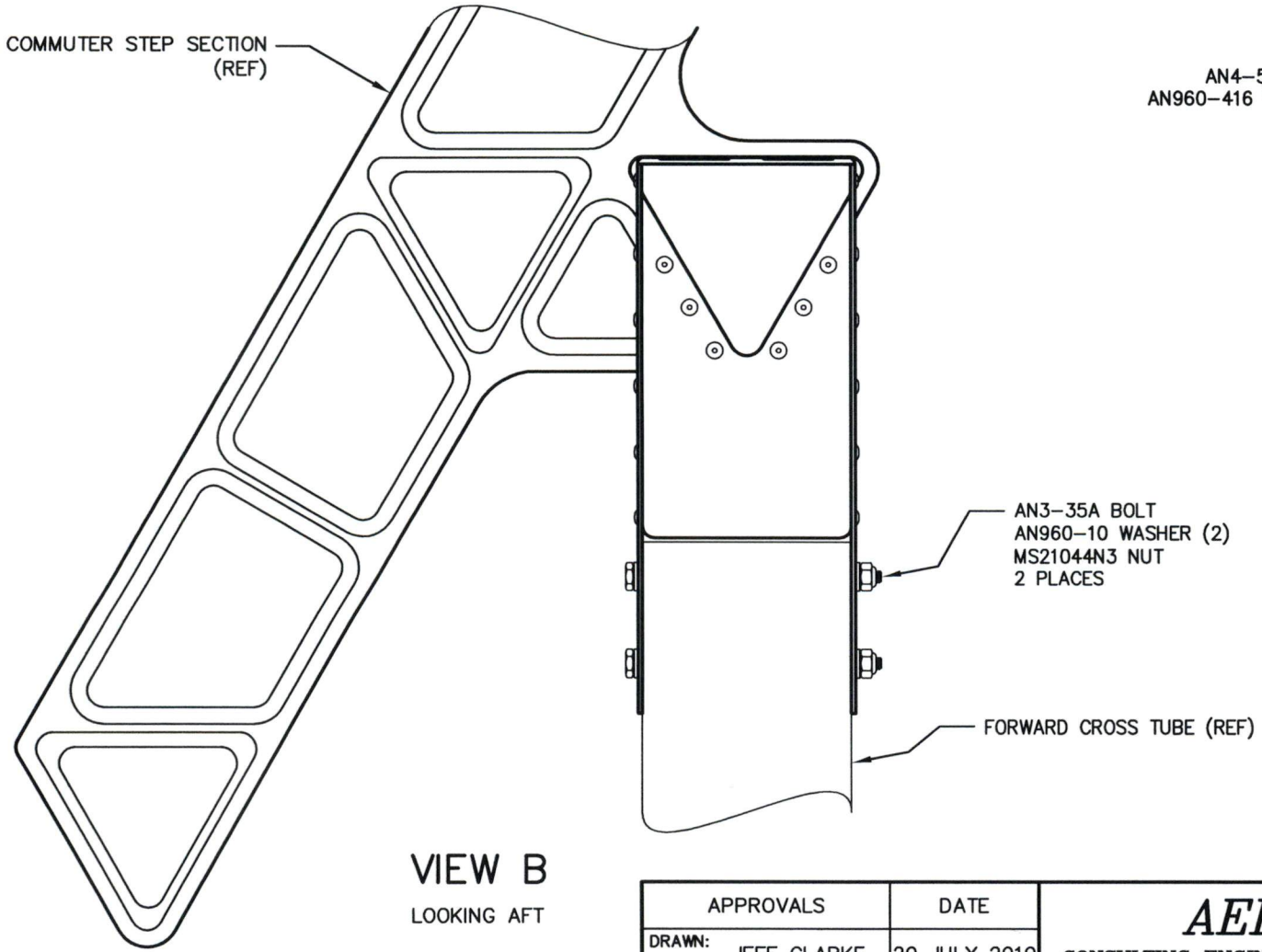
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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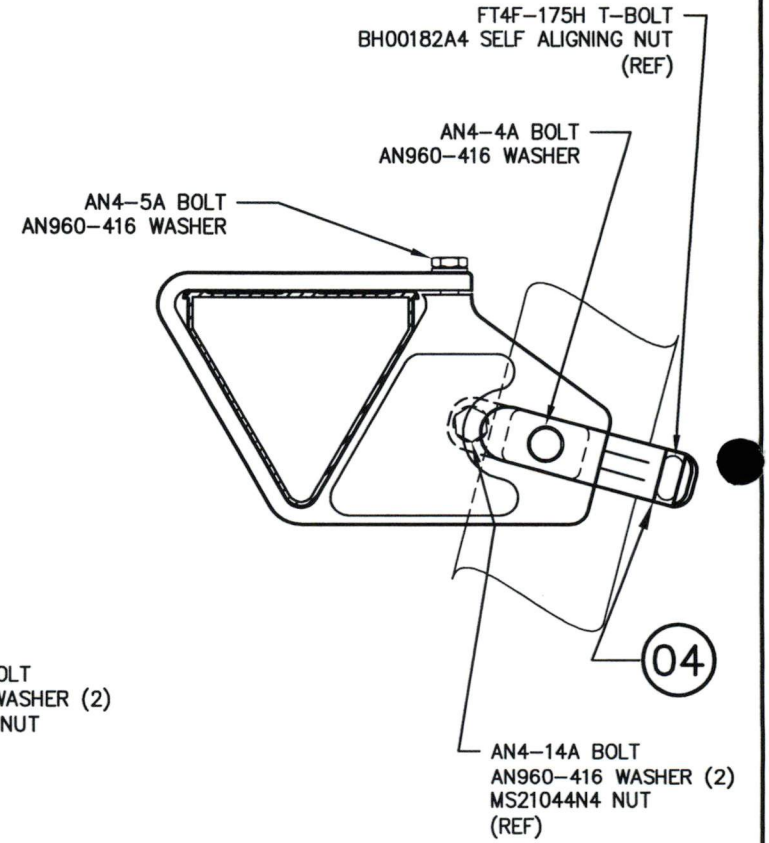
EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
LONG COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 1 OF 3	A4	82751	0	



VIEW B

LOOKING AFT



VIEW C

LOOKING AFT
TYPICAL, FORWARD AND AFT CROSS TUBES

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
LONG COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 3	A4	82751	0

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	CREATED FROM 82705, REV. 1	BJC	20/07/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 50 – 70 INCH–POUNDS.

3. THIS INSTALLATION IS NOT COMPATIBLE WITH AERO DESIGN LTD. LONG QUICK RELEASE CARGO BASKET INSTALLATION IN ACCORDANCE WITH DRAWING 78401. THIS INSTALLATION MAY BE APPLIED TO THE OPPOSITE SIDE WHEN THE LONG QUICK RELEASE CARGO BASKET IS INSTALLED.

   ALL OTHER AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS ARE COMPATIBLE WITH THIS INSTALLATION.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	LONG COMMUTER STEP INST'N	5.9	1862	10953	1060	6236

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	LONG COMMUTER STEP INST'N	13.0	73.3	953.0	41.7	542.6

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APPROVALS		DATE
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CHECKED:	E. BURGOIN	

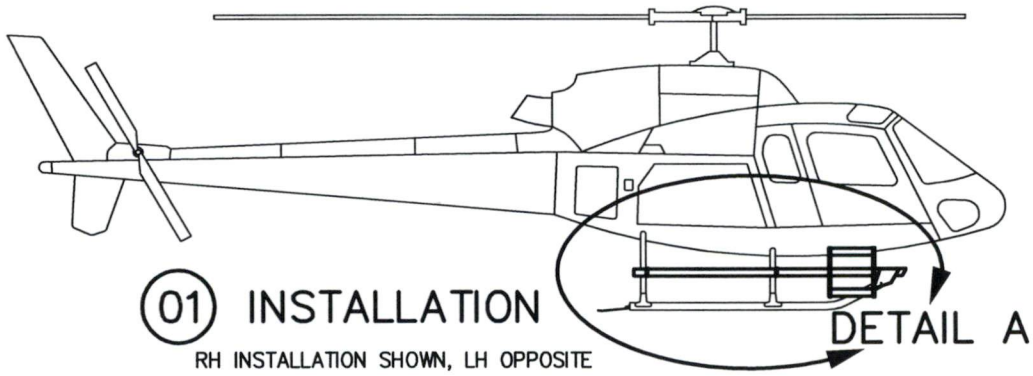
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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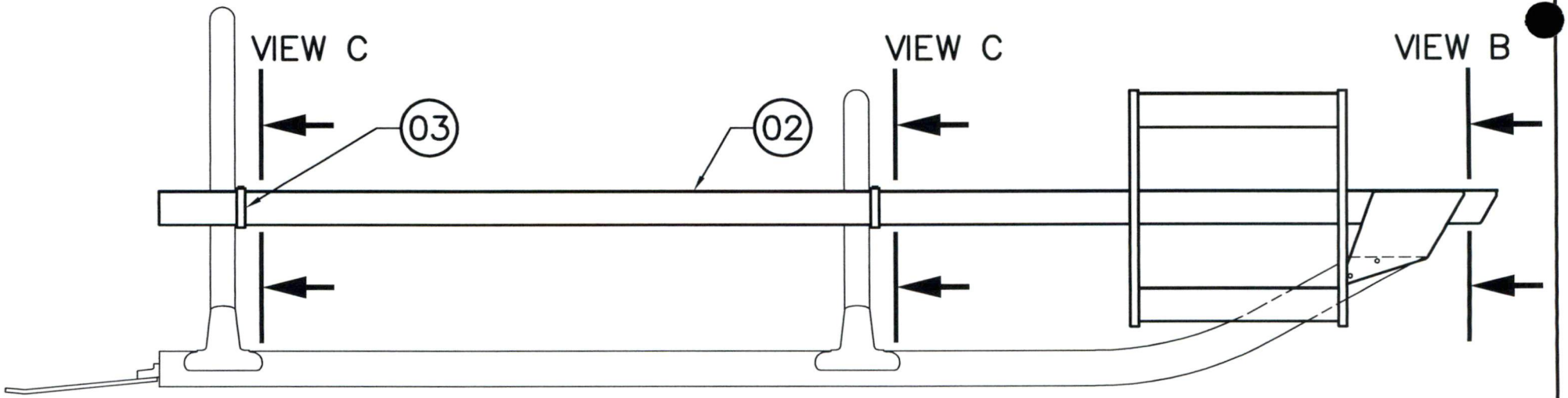
EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
LONG COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	82751	0



01 INSTALLATION

RH INSTALLATION SHOWN, LH OPPOSITE



-02	-01	PART NO.	ITEM	DESCRIPTION
2	2	MS21044N3		NUT
4	4	AN960-10		WASHER
2	2	AN3-35A		BOLT
2	2	AN960-416		WASHER
2	2	AN4-5A		BOLT
2	2	AN4-4A		BOLT
2	2	78620-01	04	CLAMP ASSEMBLY
2	2	82723-01	03	BRACKET
1		82718-03-02	02	STEP ASSEMBLY (LH)
	1	82718-03-01	02	STEP ASSEMBLY (RH)
		82752-01-02	01	LEFT HAND INSTALLATION
		82752-01-01	01	RIGHT HAND INSTALLATION
QTY	QTY	LIST OF MATERIALS		

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

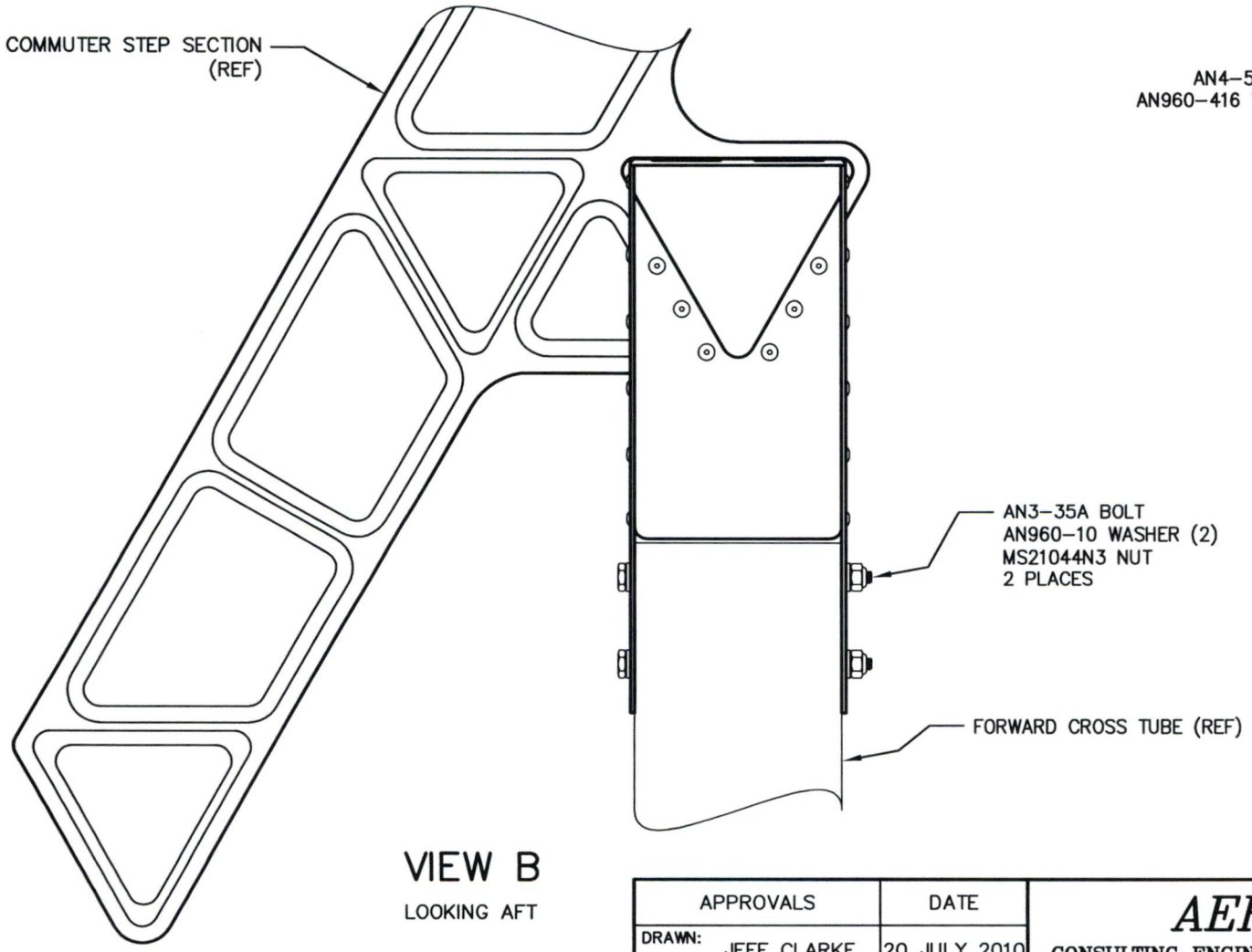
DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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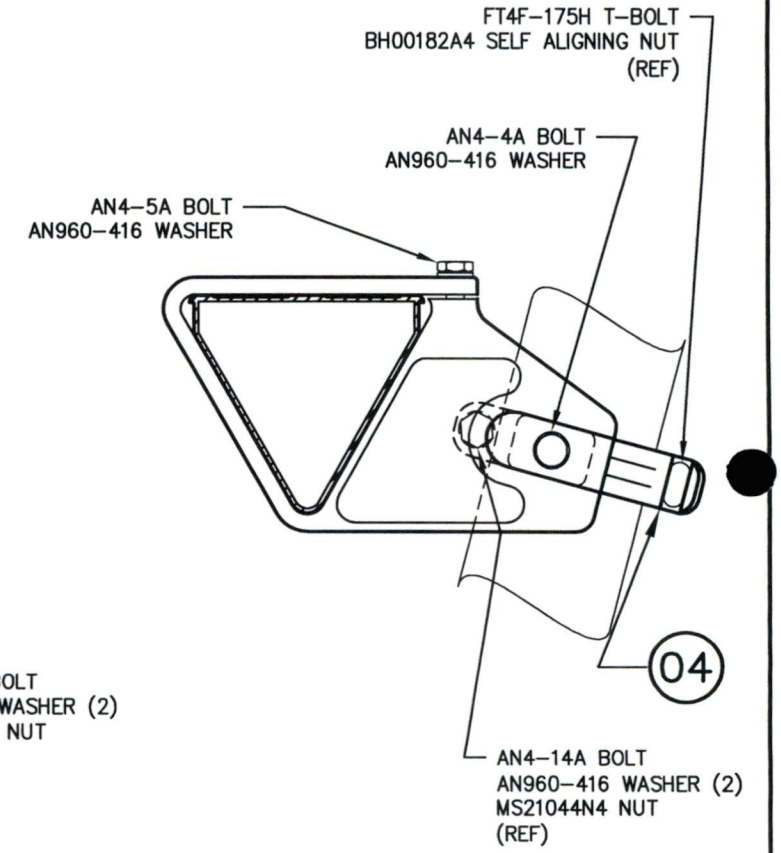
EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 1 OF 3	A4	82752	0	



VIEW B

LOOKING AFT



VIEW C

LOOKING AFT
TYPICAL, FORWARD AND AFT CROSS TUBES

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 3	A4	82752	0

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	CREATED FROM 82709, REV. 0	BJC	20/07/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 50 – 70 INCH–POUNDS.

3. THIS INSTALLATION IS NOT COMPATIBLE WITH AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS IN ACCORDANCE WITH STC SH08–16. THIS INSTALLATION MAY BE APPLIED TO THE OPPOSITE SIDE WHEN A QUICK RELEASE CARGO BASKET IS INSTALLED.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	FULL LENGTH COMMUTER STEP INSTALLATION	8.1	2325	18727	1044	8410

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	FULL LENGTH COMMUTER STEP INSTALLATION	17.8	91.5	1629.4	41.1	731.7

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APPROVALS		DATE
DRAWN:	JEFF CLARKE	20 JULY 2010
CHECKED:	E. BURGOIN	

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TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	82752	0

DECLARATION OF CONFORMITY WITH THE CERTIFICATION BASIS

In accordance with Canadian Aviation Regulations Subpart 521, I hereby declare that the design of the Quick Release Maintenance Step, Maintenance Peg Step, and Fixed Cabin Steps, as detailed in the data approved by Transport Canada approval SH09-38, Issue 2, has been demonstrated to conform to the best of my knowledge to the basis of certification established by the Minister for that approval in file C-10-0716.

AERO Design Ltd.

per: 
Signature

E. Burgoin	Consultant	01 September, 2010
Print Name	Title	Date

***AERO* DESIGN LTD.**
2013 – 39 Avenue N.E.
Calgary, Alberta, T2E 6R7

Tel: 403-250-8027
Fax: 403-250-8333

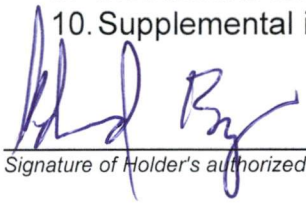
SIGNED UNDERTAKING

A In accordance with CAR 521 AERO Design Ltd. hereby

Company to hold the approval document(s):

undertake to carry out the responsibilities of a design approval document holder, as set out in Division VIII of Part V, Subpart 21 of the CARs, regarding:

1. Technical capability,
2. Service difficulty reporting,
3. Establishing a service difficult reporting system,
4. Investigation of service difficulty reports,
5. Mandatory changes,
6. Transfers,
7. Record keeping and loss or disposal of records,
8. Manuals,
9. Instructions for continued airworthiness, and
10. Supplemental integrity instructions



Signature of Holder's authorized person:

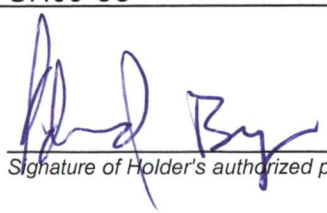
27 July 2010
Date:

President
Position / Title:

B Pursuant to the requirements of the CARs, Part V, Subpart 521, Chapter 160:
AERO Design Ltd. agrees to administer the preceding responsibilities on behalf of the holder of the approval(s) below, on a fee for service basis.
Data referred to herein may be found in:

Transport Canada file number: C-10-0716
and / or
Project Reference number: 827
and / or
Approval Number: SH09-38

per: 
Signature


Signature of Holder's authorized person:

E. Burgoin Consultant
Print Name *Title*

E. Bugoin
Print Name

27 July 2010
Date:

27 July 2010
Date

FORM AE-100

DEPARTMENT OF TRANSPORT STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS			AE-100 No.: Initial Issue Date: Revision: Revision Date:	AE827-1 7 August, 2009 2 01 September 2010
Aircraft Mfr: Aircraft Model: Registration:	Eurocopter AS350 & AS355 Series ALL ELIGIBLE	Model / Type Airplane ☐ Helicopter ☒ Appliance ☐ Component ☐	Approval No.: Delegation No.: Delegate Name: Company:	SH09-38 290M E. Burgoin *AERO* Design Ltd.

LIST OF APPROVED REPORTS AND DATA

Document Number	Revision	Document Title	Compliance Status
DCL827-1	4	Document Control List and all documents referred to therein	As per Compliance Program, CP827, Revision 0
DCL827-11	2	Document Control List and all documents referred to therein	
ER827.02	0	Engineering Report	
82701	1	Quick Release Maintenance Step Installation	
82716	0	Step Assembly	
82722	0	Step End Fabrication	
		DATA APPROVED BY TRANSPORT CANADA	
ICA827.91	3	Instructions for Continued Airworthiness	
FMS827.90	2	Flight Manual Supplement	

CERTIFICATION

UNDER THE AUTHORITY VESTED IN ME BY THE DEPARTMENT OF TRANSPORT, I HEREBY CERTIFY THAT THE DATA LISTED ABOVE AND ON THE ATTACHED SHEETS NUMBERED Nil HAVE BEEN EXAMINED IN ACCORDANCE WITH ESTABLISHED PROCEDURES AND FOUND TO COMPLY, TO THE BEST OF MY KNOWLEDGE AND BELIEF WITH THE PERTINENT COMPLIANCE REQUIRMENTS.

I THEREFORE [☒] RECOMMEND FOR APPROVAL OF THESE DATA (ICA827.91 and FMS827.90)

[☒] APPROVE THESE DATA



E. Burgoin, DAR 290M

FORM AE-100

DEPARTMENT OF TRANSPORT STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS					
Aircraft Mfr:	Eurocopter	Model / Type		AE-100 No.:	AE827-2
Aircraft Model:	AS350 & AS355 Series			Initial Issue Date:	7 August, 2009
Registration:	ALL ELIGIBLE	Airplane	☐	Revision:	2
		Helicopter	☒	Revision Date:	01 September 2010
		Appliance	☐	Approval No.:	SH09-38
		Component	☐	Delegation No.:	290M
				Delegate Name:	E. Burgoin
				Company:	*AERO* Design Ltd.

LIST OF APPROVED REPORTS AND DATA

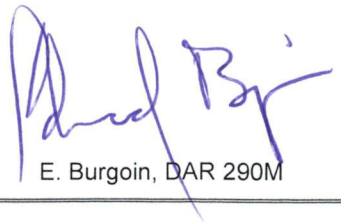
Document Number	Revision	Document Title	Compliance Status
DCL827-2	3	Document Control List and all documents referred to therein	As per Compliance Program, CP827, Revision 0
82707	1	Maintenance Peg Step Installation	
82740	1	Maintenance Peg Step Fabrication	
		DATA APPROVED BY TRANSPORT CANADA	
ICA827.93	2	Instructions for Continued Airworthiness	

CERTIFICATION

UNDER THE AUTHORITY VESTED IN ME BY THE DEPARTMENT OF TRANSPORT, I HEREBY CERTIFY THAT THE DATA LISTED ABOVE AND ON THE ATTACHED SHEETS NUMBERED Nil HAVE BEEN EXAMINED IN ACCORDANCE WITH ESTABLISHED PROCEDURES AND FOUND TO COMPLY, TO THE BEST OF MY KNOWLEDGE AND BELIEF WITH THE PERTINENT COMPLIANCE REQUIRMENTS.

I THEREFORE [☒] RECOMMEND FOR APPROVAL OF THESE DATA (ICA827.93)

[☒] APPROVE THESE DATA



E. Burgoin, DAR 290M

FORM AE-100

DEPARTMENT OF TRANSPORT STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS			AE-100 No.: Initial Issue Date: Revision: Revision Date:	AE827-3 28 July, 2009 1 01 September 2010
Aircraft Mfr: Eurocopter Aircraft Model: AS350 & AS355 Series Registration: ALL ELIGIBLE	Model / Type Airplane ☐ Helicopter ☒ Appliance ☐ Component ☐		Approval No.: Delegation No.: Delegate Name: Company:	SH09-38 290M E. Burgoin *AERO* Design Ltd.

LIST OF APPROVED REPORTS AND DATA

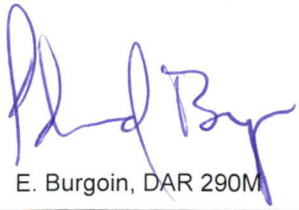
Document Number	Revision	Document Title	Compliance Status
DCL827-3	4	Document Control List and all documents referred to therein	As per Compliance Program, CP827, Revision 0
DCL827-13	3	Document Control List and all documents referred to therein	
ER827.02	0	Engineering Report	
82705	1	Long Fixed Cabin Step Installation	
82706	1	Short Fixed Cabin Step Installation	
82709	0	Full Length Cabin Step Installation	
82715	0	Short Fixed Cabin Step Assembly	
82717	0	Long Fixed Cabin Step Assembly	
82723	0	Bracket Fabrication	
82724	0	Bracket Fabrication	
82733	0	Short Cabin Step Parts Fabrication	
82734	0	Cabin Step Parts Fabrication	
82750	0	Short Fixed Commuter Cabin Step Installation	
82751	0	Long Fixed Commuter Cabin Step Installation	
82752	0	Full Length Fixed Commuter Cabin Step Installation	
82718	0	Commuter Cabin Step Assembly	
82736	0	Commuter Cabin Step Parts Fabrication	
82760	0	Commuter Step Assembly	
82765	1	Bracket Fabrication	
		DATA APPROVED BY TRANSPORT CANADA	
ICA827.92	2	Instructions for Continued Airworthiness	

CERTIFICATION

UNDER THE AUTHORITY VESTED IN ME BY THE DEPARTMENT OF TRANSPORT, I HEREBY CERTIFY THAT THE DATA LISTED ABOVE AND ON THE ATTACHED SHEETS NUMBERED Nil HAVE BEEN EXAMINED IN ACCORDANCE WITH ESTABLISHED PROCEDURES AND FOUND TO COMPLY, TO THE BEST OF MY KNOWLEDGE AND BELIEF WITH THE PERTINENT COMPLIANCE REQUIRMENTS.

I THEREFORE [☒] RECOMMEND FOR APPROVAL OF THESE DATA (ICA827.92)

[☒] APPROVE THESE DATA



E. Burgoin, DAR 290M

AIRWORTHINESS NOTICE B043 EDITION 2, dated 28 January 2000

CONFORMITY INSPECTION ASSOCIATED WITH APPLIANCE TYPE CERTIFICATION OR MODIFICATION/REPAIR APPROVAL PROJECTS

(This Airworthiness Notice supersedes AN No. B043 Edition 1, dated 24 April 1998.)

Purpose

The purpose of this notice is to explain the responsibilities of an applicant prior to requesting a conformity inspection associated with the prototype evaluation of a supplemental type certificate (STC), a limited supplemental type certificate (L/STC), a repair design certificate (RDC), a TSO and/or an appliance type certificate (AP-TC) installation. This revision is intended to clarify the qualifications for those persons responsible for the conformity inspections.

Background

In several cases, prototype installations have not been performed in accordance with the applicant's installation drawings nor have the necessary ground tests been conducted, where required, prior to seeking a conformity inspection by Transport Canada (TC). This situation may often result in ineffective use of TC resources.

Conformity Requirements (Prototype Installation)

The need for a conformity inspection by Transport Canada on a prototype installation associated with an STC, L/STC, RDC, AP-TC or TSO design approval project will be determined by the regional engineer responsible for the project, and the applicant will be advised accordingly. Where such a requirement has been identified, the prototype installation is to be verified by the applicant or his designated person for conformity with the applicable installation drawings and, where required, ground tests performed to determine functionality. The above functions are to be carried out prior to the applicant requesting the required conformity inspection by TC representatives.

Confirmation

A written confirmation is to be provided to the responsible regional project engineer using the Conformity Inspection Record form appended to this notice, or an equivalent form acceptable to TC. The completed form is to be signed by an appropriately rated Aircraft Maintenance Engineer (AME) or Approved Maintenance Organization (AMO). TC form 24-0045 (Conformity Certificate - Repair or Modification), which is intended to certify the installation of an approved modification or repair, should not be used as a Conformity Inspection Record. The Conformity Inspection Record should be accompanied by details pertaining to the location of the test article, the proposed modification or repair, and a proposed date for accomplishing the conformity inspection by TC Airworthiness Inspectors.

CONFORMITY INSPECTION RECORD

Applicant	Aeronautical Product				Title of Change
AERO Design Ltd.	Make	Model	Serial No.	Registration	Fixed Cabin Step Installation
	Eurocopter	AS350	N/A	N/A	

Drawing No.	Applicant's Inspector Signature	Date	T.C. Inspection Signature	Date	Findings
Installation					
82705 (Long Inst.)	Clk.	01/10/10			
82706 (Short Inst.)	Clk.	↓			
82709 (Full Length Installation)	Clk.	↓			
82750 (Long Commuter Inst.)	Clk.	↓			
82751 (Short Commuter Inst.)	Clk.	↓			
82752 (Full Length Commuter Inst.)	Clk.	↓			
Assembly					
82715 (Short Ass'y)	Clk.	01/10/10			
82717 (Long/Full Length Assembly)	Clk.	↓			
82718 (Commuter Assembly)	Clk.	↓			

APPLICANT'S ATTESTATION

I hereby confirm that the prototype installation for the subject

☒ MODIFICATION,

☐ REPAIR,

☐ TSO/AP-TC ARTICLE

is in conformity with the applicable installation drawing(s) listed above and that necessary ground tests have been carried out.
[Please check (✓) the applicable box.]

Additional Information:

- Installations performed on scrap L/G @ AERO Design
- only short steps (82715-01) painted.

Signature: Clk.
AERO DESIGN LTD.

TC INSPECTION

☐ ACCEPTABLE

☐ UNACCEPTABLE

Remarks:

Signature: _____

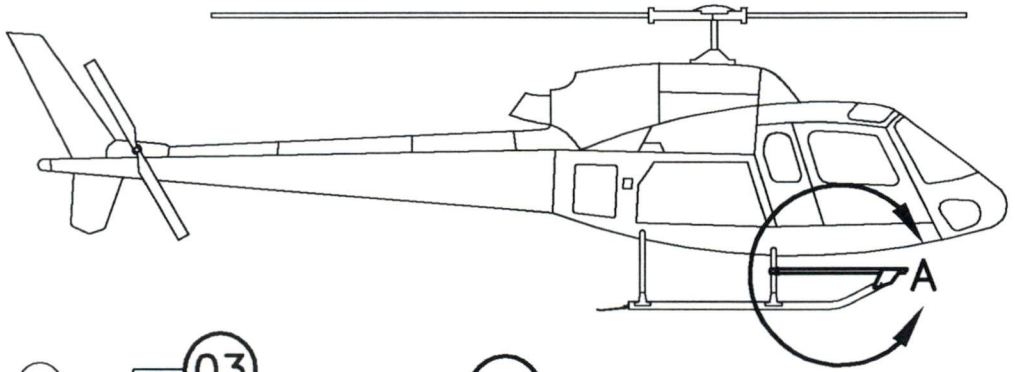
STAFF INSTRUCTION 513-008

Flight Test Division Support of Regional Flight Test Activities

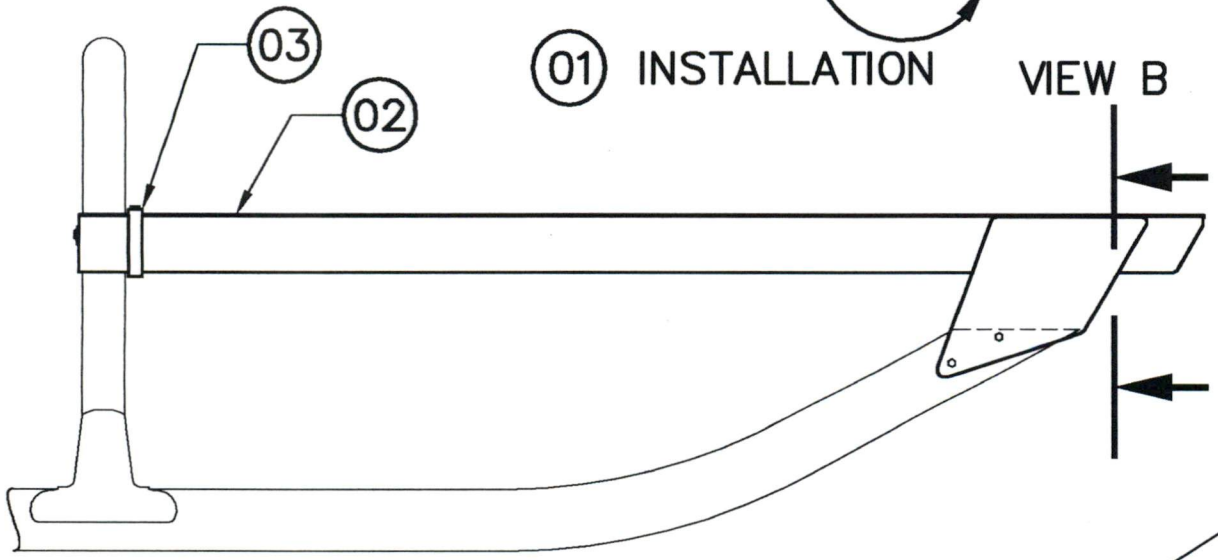
Appendix A – Statement of Suitability for Flight Test

Aircraft Type/Model	Eurocopter AS350
Registration	C- GIYO
Serial Number	2274
Description of Design Change(s)	Installation of Aero Design Ltd. Cabin Steps
Design Drawings	See Document Control Lists DCL827-3, DCL827-13

Statement of Suitability for Flight Test	
This is to certify that I have reviewed the subject design change and that I have reasonable assurance that compliance could be found with all applicable design requirements, except for those requirements that will be substantiated by flight-testing. I consider the aircraft to be safe for flight.	
Regional Engineer, Aircraft Certification, or Authorized Person	Date 30 Sept 2010

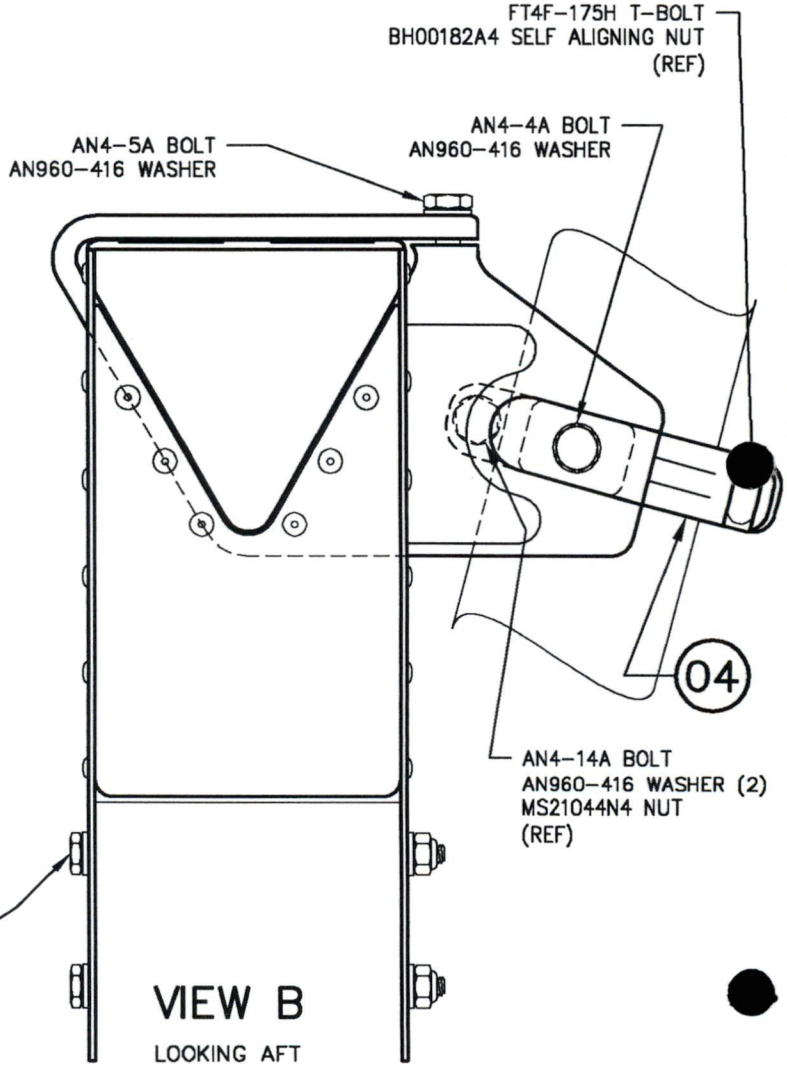


01 INSTALLATION



DETAIL A

LOOKING INBOARD AT RIGHT SIDE, LEFT SIDE OPPOSITE



VIEW B

LOOKING AFT

QTY	PART NO.	ITEM	DESCRIPTION
01	LIST OF MATERIALS		
2	MS21044N3		NUT
4	AN960-10		WASHER
2	AN3-35A		BOLT
2	AN960-416		WASHER
1	AN4-5A		BOLT
1	AN4-4A		BOLT
1	78620-01	04	CLAMP ASSEMBLY
1	82723-01	03	BRACKET
1	82717-01	02	STEP ASSEMBLY
	82705-01	01	INSTALLATION

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 OCT 2008
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

AERO DESIGN LTD.

CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M
2013 – 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7
tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign.ca

EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
LONG STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 1 OF 2	A4	82705	1	

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
1	CHANGE TO NEW STEP EXTRUSION AND PARTS	BJC	23/04/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 50 – 70 INCH–POUNDS.

3. THIS INSTALLATION IS NOT COMPATIBLE WITH AERO DESIGN LTD. LONG QUICK RELEASE CARGO BASKET INSTALLATION IN ACCORDANCE WITH STC SH08–16, DRAWING 78401. THIS INSTALLATION MAY BE APPLIED TO THE OPPOSITE SIDE OF THE HELICOPTER WHEN THE LONG QUICK RELEASE CARGO BASKET IS INSTALLED.

   ALL OTHER AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS ARE COMPATIBLE WITH THIS INSTALLATION.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	LONG STEP INSTALLATION	2.3	1935	4378	1000	2260

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	LONG STEP INSTALLATION	5.0	76.2	381.0	39.4	197.0

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APPROVALS	DATE
DRAWN: JEFF CLARKE	20 OCT 2008
CHECKED: E. BURGOIN	

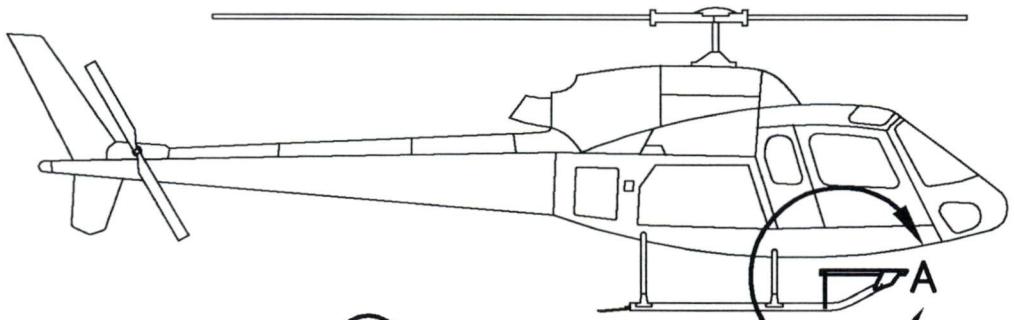
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

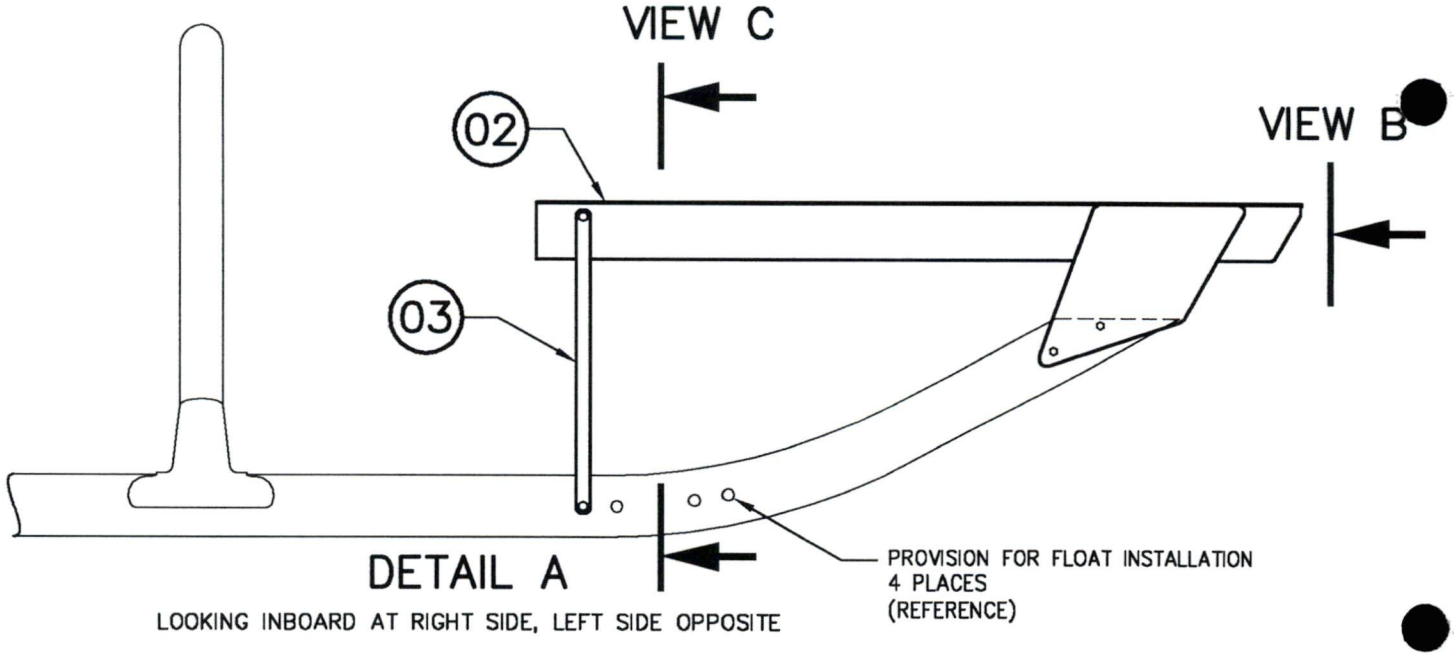
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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
LONG STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 2	A4	82705	1



01 INSTALLATION



DETAIL A

LOOKING INBOARD AT RIGHT SIDE, LEFT SIDE OPPOSITE

QTY	PART NO.	ITEM	DESCRIPTION
01	LIST OF MATERIALS		
2	MS21044N3		NUT
4	AN960-10		WASHER
2	AN3-35A		BOLT
2	MS21044N4		NUT
4	AN960-416		WASHER
2	AN4-42A		BOLT
1	82733-02	04	BUSHING
1	82733-01	03	BRACKET
1	82715-01	02	STEP ASSEMBLY
	82706-01	01	INSTALLATION

APPROVALS	DATE
DRAWN: JEFF CLARKE	16 JULY 2009
CHECKED: E. BURGOIN	

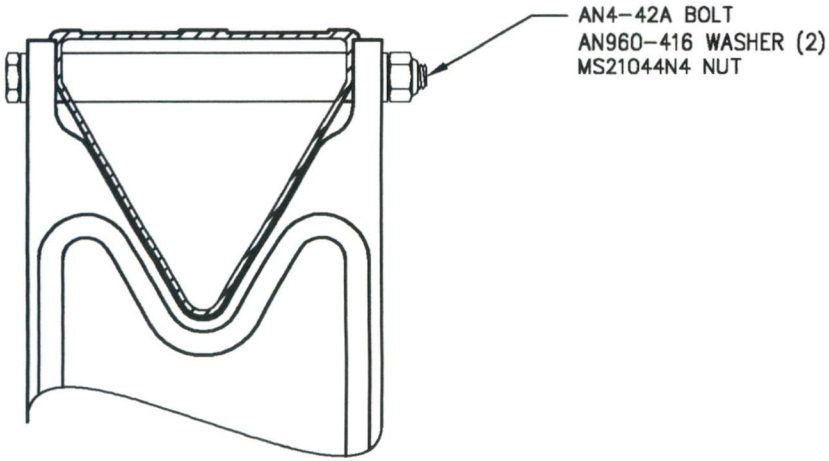
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TOLERANCES ON:

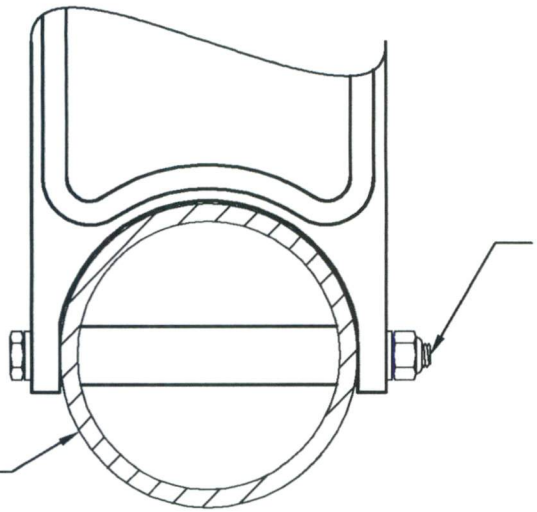
DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
SHORT STEP INSTALLATION

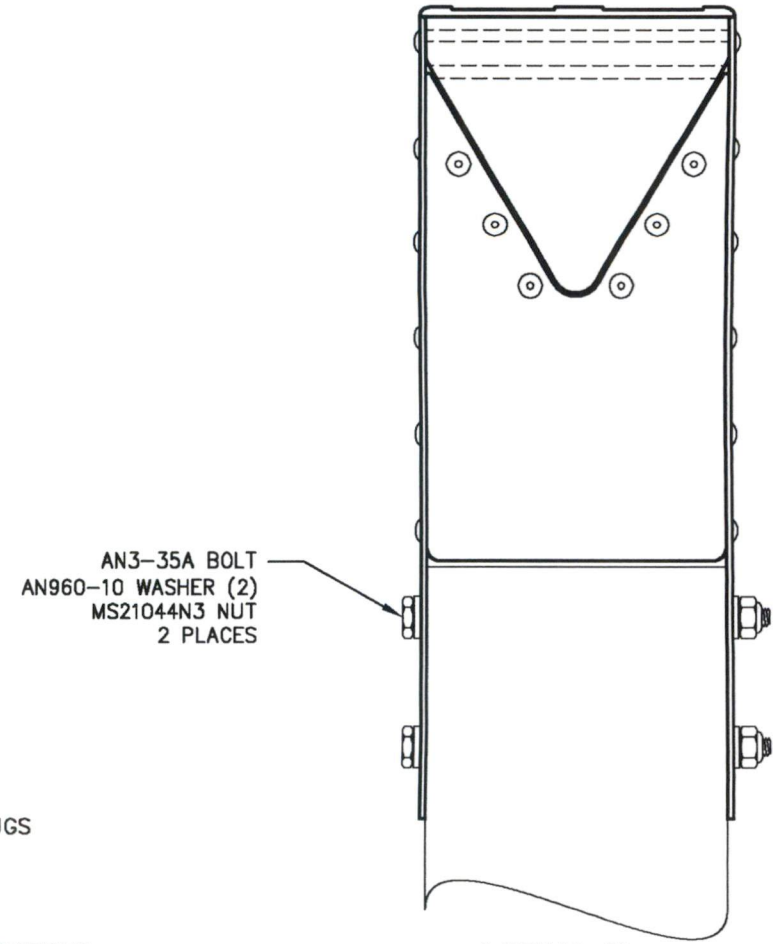
NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 3	A4	82706	1





VIEW C

LOOKING AFT
THROUGH STEP AND SKID TUBE



VIEW B

LOOKING AFT

APPROVALS	DATE
DRAWN: JEFF CLARKE	16 JULY 2009
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
SHORT STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 3	A4	82706	1

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
1	CHANGE STEP PROFILE	BJC	APR 30/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 50 – 70 INCH–POUNDS.

3. THIS INSTALLATION IS COMPATIBLE WITH ALL AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS IN. ACCORDANCE WITH STC SH08–16.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	SHORT STEP INSTALLATION	1.9	1755	3335	1000	1900

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	SHORT STEP INSTALLATION	4.2	69.1	290.2	39.4	165.5

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APPROVALS	DATE
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CHECKED: E. BURGOIN	

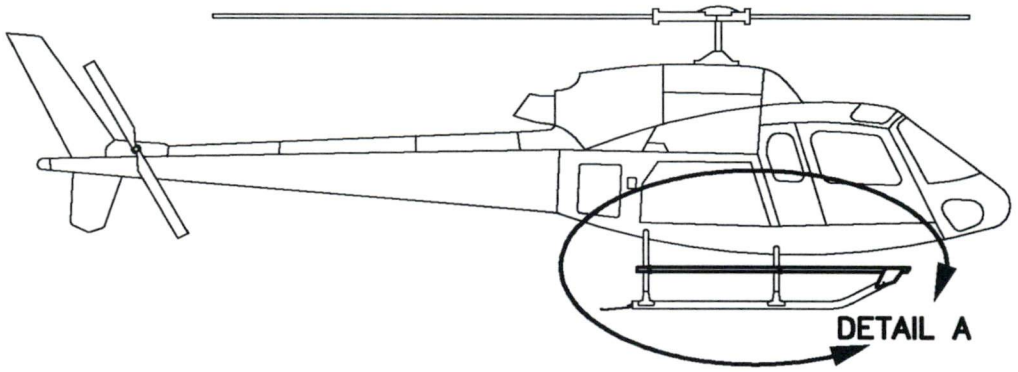
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TOLERANCES ON:

DECIMALS		ANGLES
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X.XX	±0.03	
X.X	±0.1	

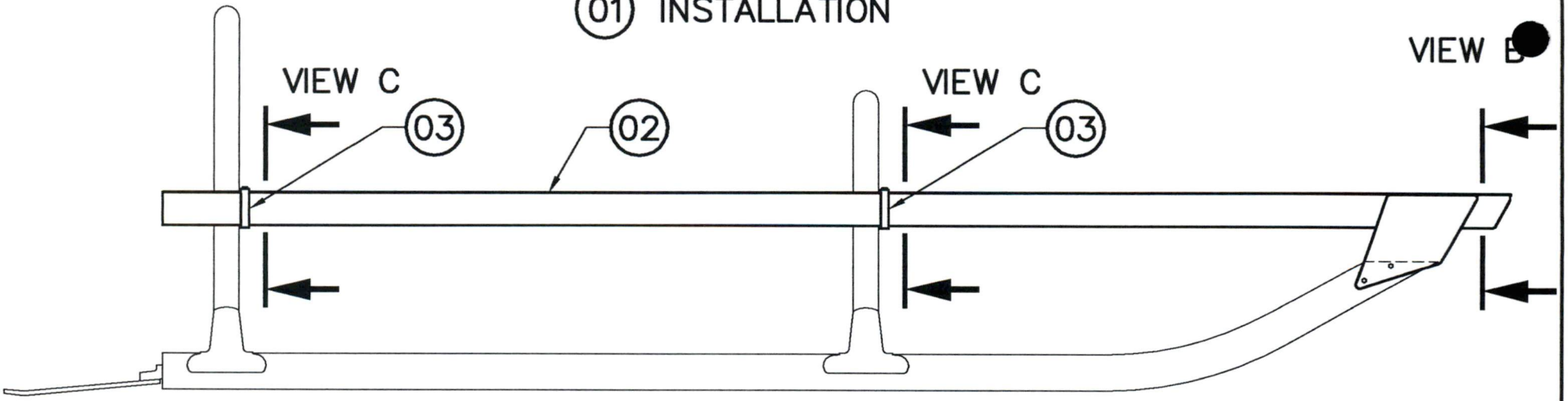
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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
SHORT STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	82706	1



(01) INSTALLATION



DETAIL A

LOOKING INBOARD AT RIGHT SIDE, LEFT SIDE OPPOSITE

QTY	PART NO.	ITEM	DESCRIPTION
01	82709-01	01	INSTALLATION
	82723-01	02	STEP ASSEMBLY
2	82723-01	03	BRACKET
2	78620-01	04	CLAMP ASSEMBLY
2	AN4-4A		BOLT
2	AN4-5A		BOLT
4	AN960-416		WASHER
2	AN3-36A		BOLT
4	AN960-10		WASHER
2	MS21044N3		NUT

LIST OF MATERIALS

APPROVALS	DATE
DRAWN: JEFF CLARKE	18 JUNE 2010
CHECKED: E. BURGOIN	

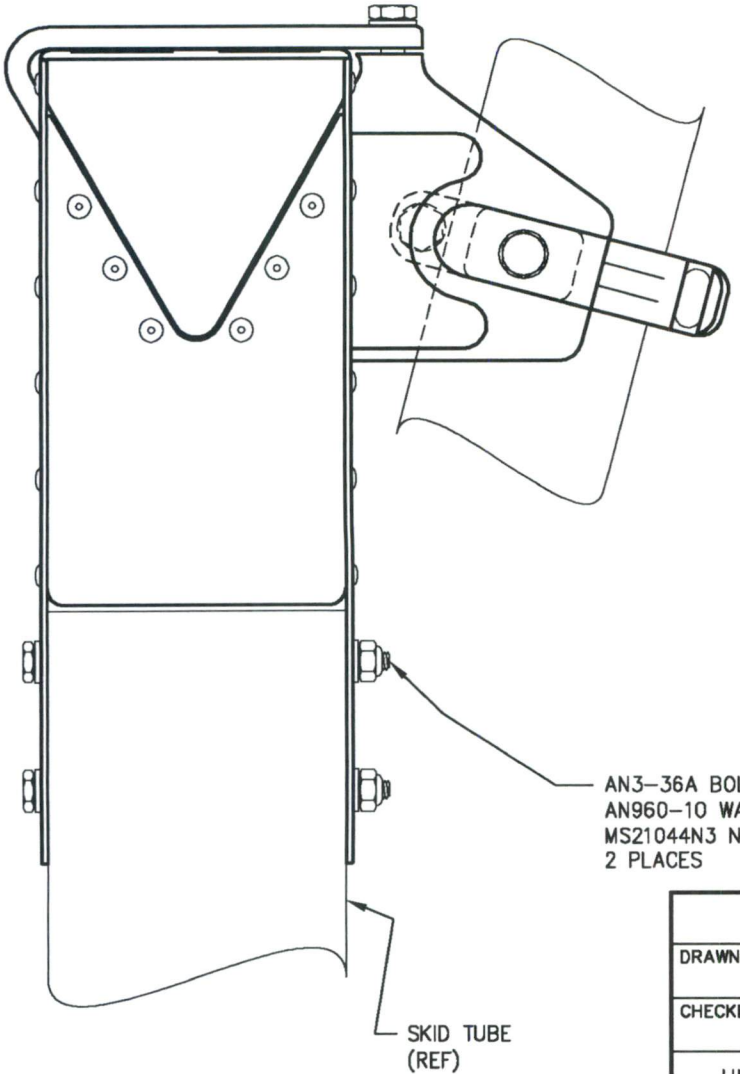
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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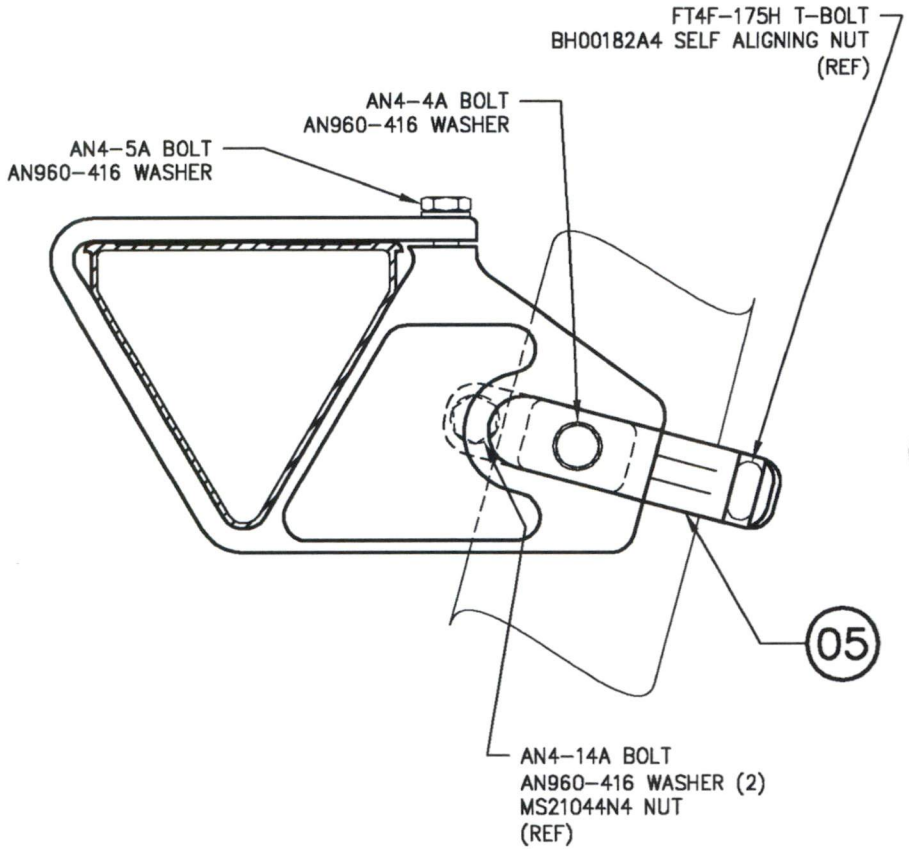
EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 3	A4	82709	0



VIEW B

LOOKING AFT



VIEW C

LOOKING AFT AT AFT CROSS TUBE ATTACHMENT

APPROVALS	DATE
DRAWN: JEFF CLARKE	18 JUNE 2010
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 3	A4	82709	0

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
1	CHANGE TO NEW STEP EXTRUSION AND PARTS	BJC	23/04/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 30 – 40 INCH–POUNDS.

3. THIS INSTALLATION IS NOT COMPATIBLE WITH AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS IN ACCORDANCE WITH STC SH08–16. THIS INSTALLATION MAY BE APPLIED TO THE OPPOSITE SIDE OF THE HELICOPTER WHEN A QUICK RELEASE CARGO BASKET IS INSTALLED.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	FULL LENGTH STEP INSTALLATION	4.4	2741	12155	1000	4434

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	FULL LENGTH STEP INSTALLATION	9.8	107.9	1057.4	39.4	386.1

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APPROVALS	DATE
DRAWN: JEFF CLARKE	18 JUNE 2010
CHECKED: E. BURGOIN	

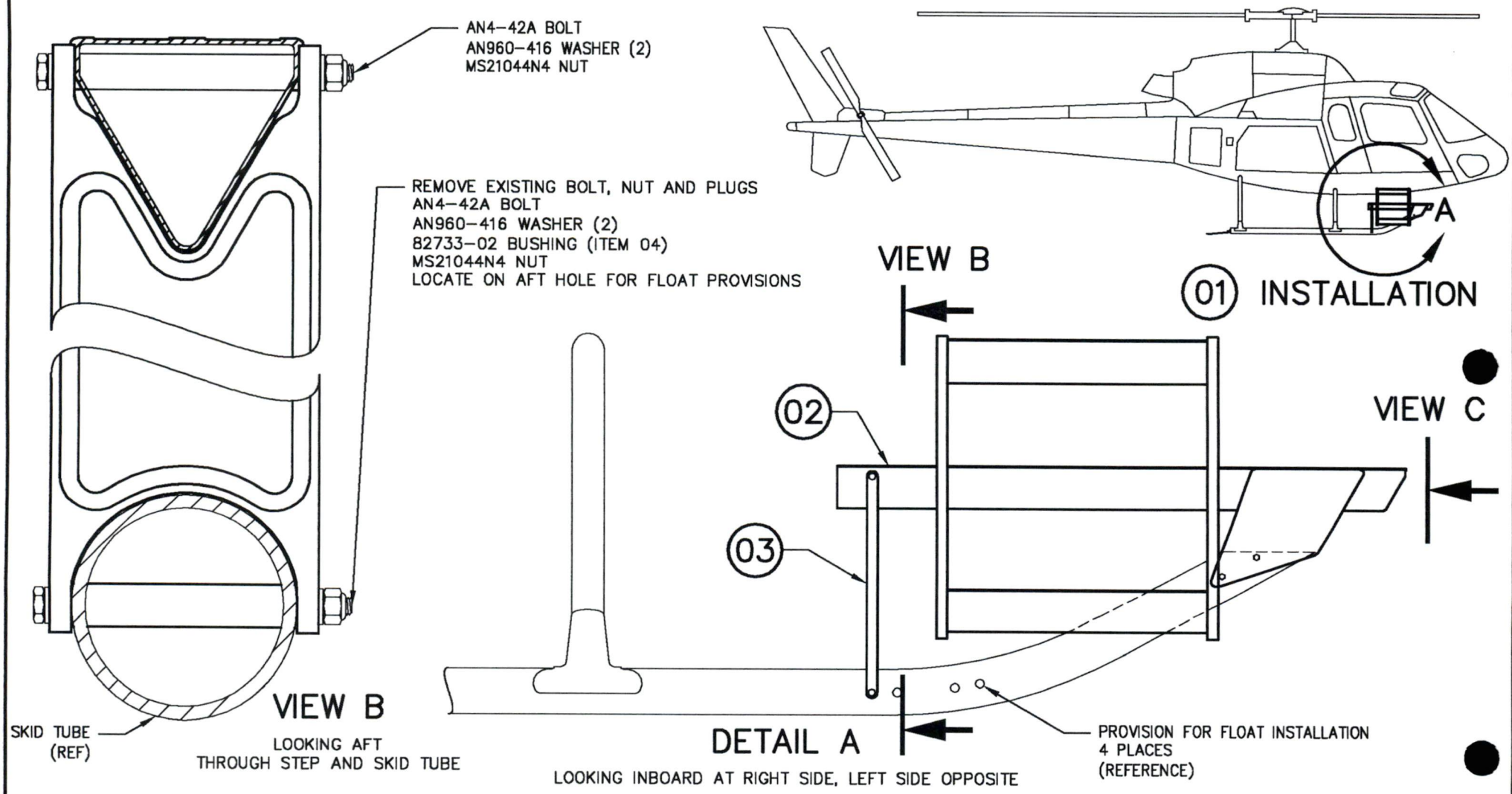
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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tel: (403) 250–8027 fax: (403) 250–8333 www.aerodesign.ca

EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	82709	0



-02	-01	PART NO.	ITEM	DESCRIPTION
2	2	MS21044N3		NUT
4	4	AN960-10		WASHER
2	2	AN3-35A		BOLT
2	2	MS21044N4		NUT
4	4	AN960-416		WASHER
2	2	AN4-42A		BOLT
1	1	82733-02	04	BUSHING
1	1	82733-01	03	BRACKET
1		82718-01-02	02	LEFT HAND STEP ASSEMBLY
	1	82718-01-01	02	RIGHT HAND STEP ASSEMBLY
		82750-01-02	01	LEFT HAND INSTALLATION
		82750-01-01	01	RIGHT HAND INSTALLATION

QTY QTY — LIST OF MATERIALS

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

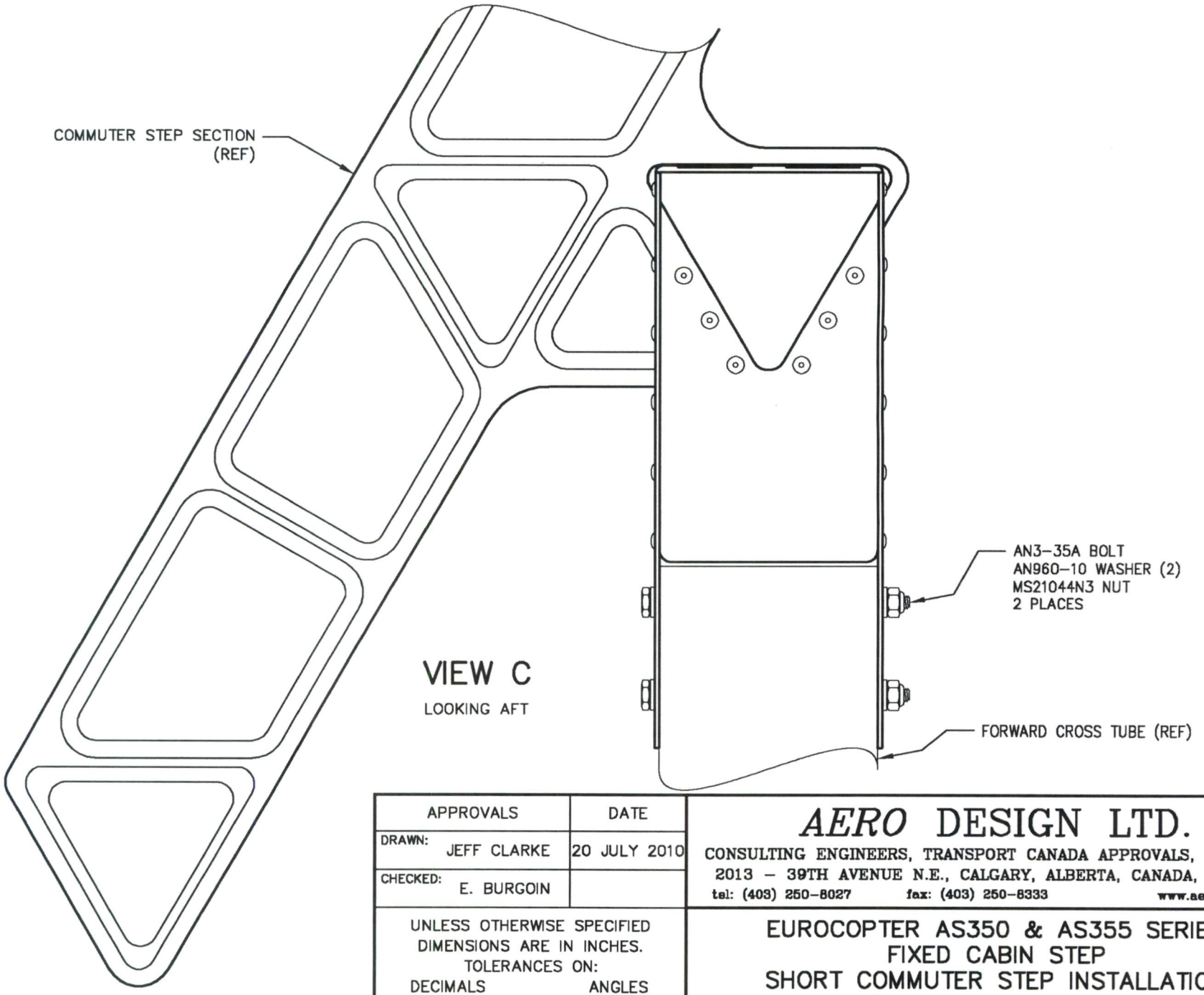
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TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
SHORT COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 3	A4	82750	0



VIEW C

LOOKING AFT

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

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DECIMALS		ANGLES
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X.XX	±0.03	
X.X	±0.1	

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SHORT COMMUTER STEP INSTALLATION

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SHEET 2 OF 3	A4	82750	0	

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	CREATED FROM 82706, REV. 1	BJC	JULY 20/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 50 – 70 INCH–POUNDS.

3. THIS INSTALLATION IS COMPATIBLE WITH ALL AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS IN ACCORDANCE WITH STC SH08–16.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	SHORT COMMUTER STEP INSTALLATION	5.5	1795	9910	1064	5874

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	SHORT COMMUTER STEP INSTALLATION	12.2	70.7	862.2	41.9	511.1

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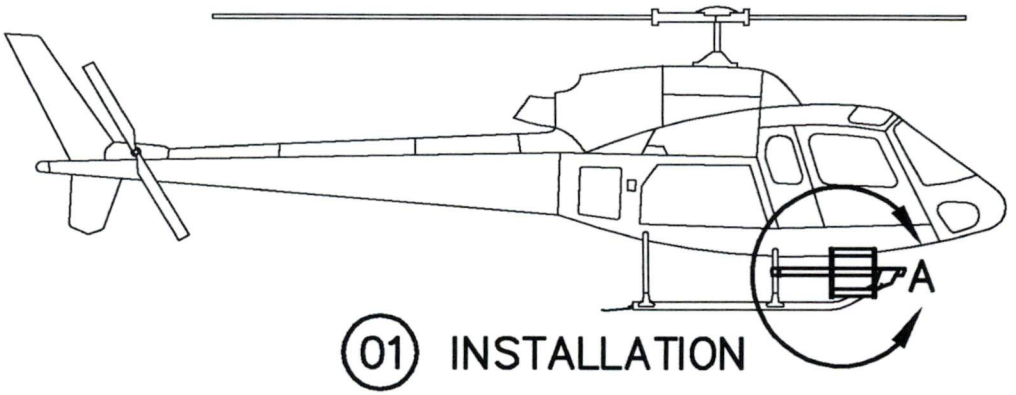
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
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X.XX	±0.03	
X.X	±0.1	

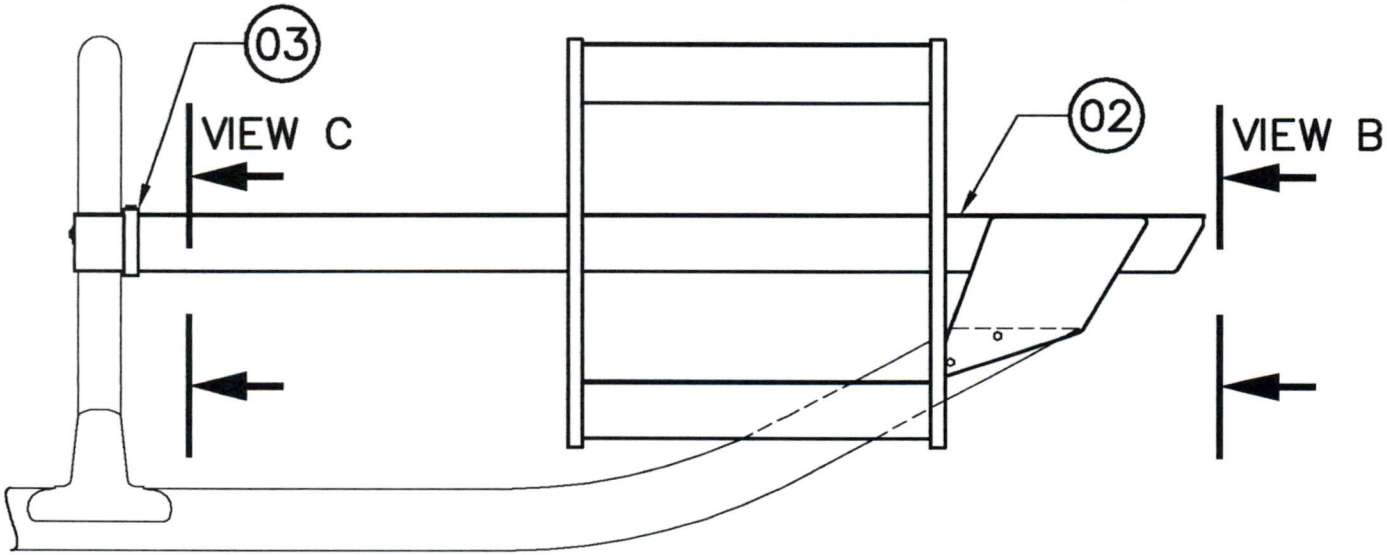
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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
SHORT COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	82750	0



01 INSTALLATION



DETAIL A

LOOKING INBOARD AT RIGHT SIDE, LEFT SIDE OPPOSITE

QTY	QTY	PART NO.	ITEM	DESCRIPTION
2	2	MS21044N3		NUT
4	4	AN960-10		WASHER
2	2	AN3-35A		BOLT
2	2	AN960-416		WASHER
1	1	AN4-5A		BOLT
1	1	AN4-4A		BOLT
1	1	78620-01	04	CLAMP ASSEMBLY
1	1	82723-01	03	BRACKET
1		82718-02-02	02	STEP ASSEMBLY (RH)
	1	82718-02-01	02	STEP ASSEMBLY (RH)
\		82751-01-02	01	LEFT HAND INSTALLATION
	\	82751-01-01	01	RIGHT HAND INSTALLATION
-02	-01	LIST OF MATERIALS		

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

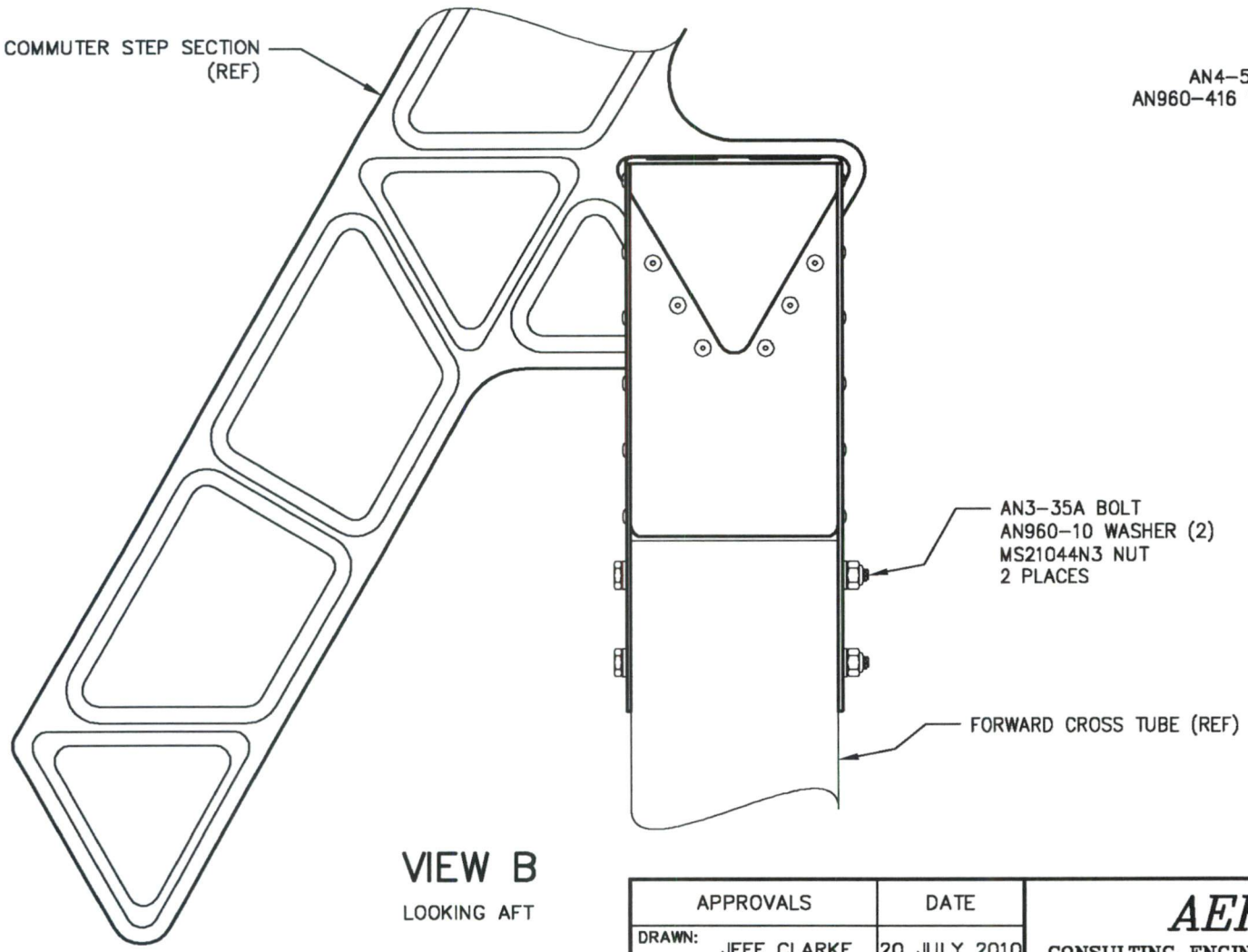
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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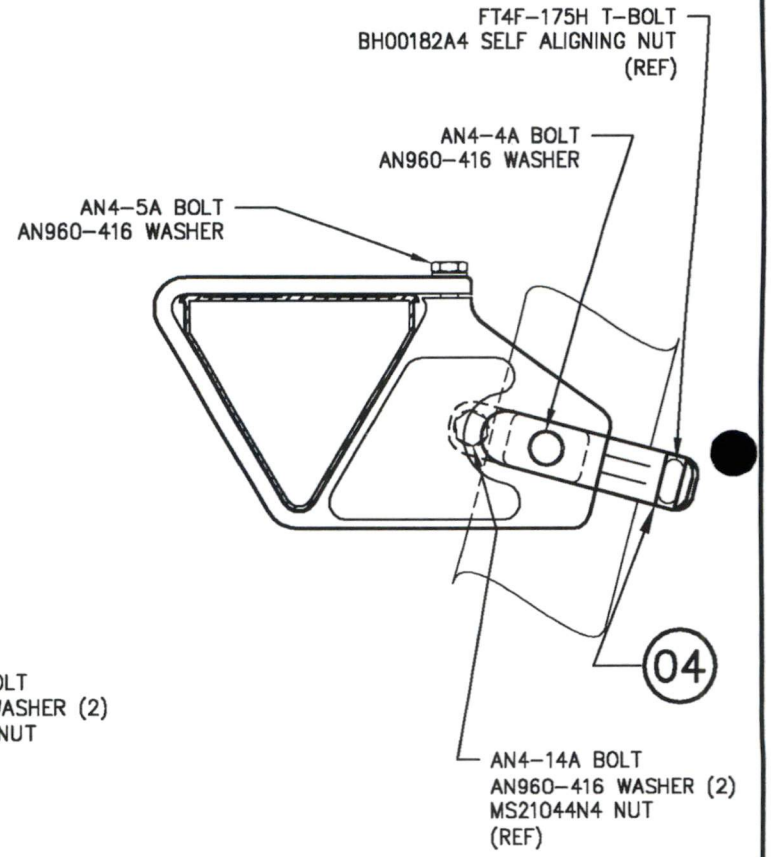
EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
LONG COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 3	A4	82751	0



VIEW B

LOOKING AFT



VIEW C

LOOKING AFT
TYPICAL, FORWARD AND AFT CROSS TUBE

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS	ANGLES
X.XXX ±0.010	±1/2°
X.XX ±0.03	
X.X ±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
LONG COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 3	A4	82751	0

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	CREATED FROM 82705, REV. 1	BJC	20/07/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 50 – 70 INCH–POUNDS.

3. THIS INSTALLATION IS NOT COMPATIBLE WITH AERO DESIGN LTD. LONG QUICK RELEASE CARGO BASKET INSTALLATION IN ACCORDANCE WITH DRAWING 78401. THIS INSTALLATION MAY BE APPLIED TO THE OPPOSITE SIDE WHEN THE LONG QUICK RELEASE CARGO BASKET IS INSTALLED.

   ALL OTHER AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS ARE COMPATIBLE WITH THIS INSTALLATION.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	LONG COMMUTER STEP INST'N	5.9	1862	10953	1060	6236

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	LONG COMMUTER STEP INST'N	13.0	73.3	953.0	41.7	542.6

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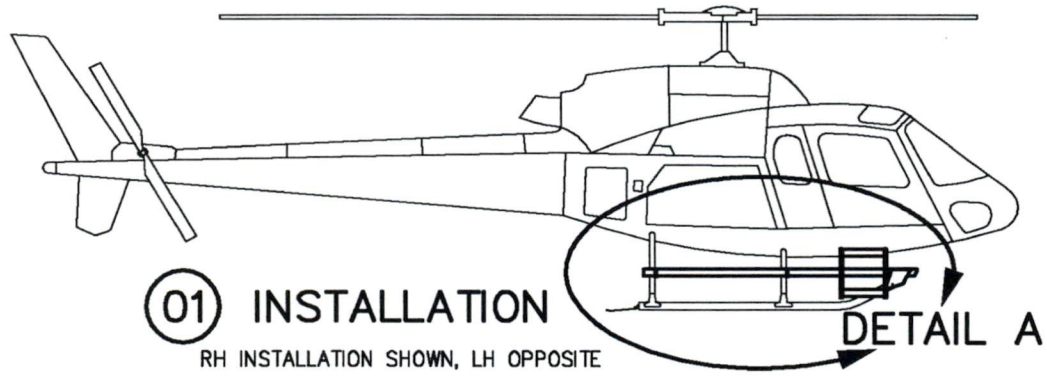
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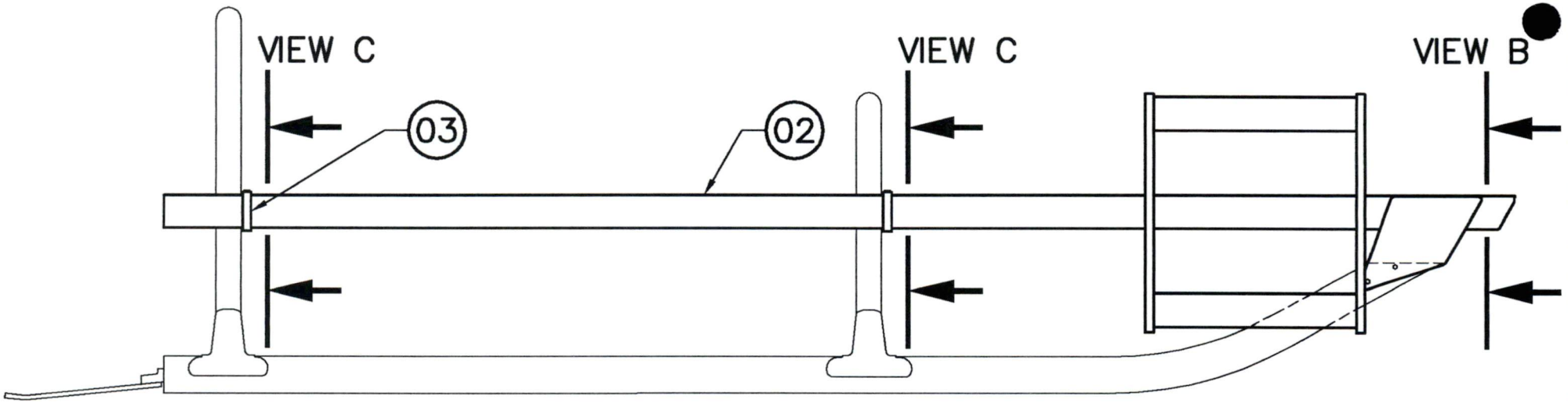
DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
LONG COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	82751	0





QTY	QTY	PART NO.	ITEM	DESCRIPTION
-02	-01			LIST OF MATERIALS
2	2	MS21044N3		NUT
4	4	AN960-10		WASHER
2	2	AN3-35A		BOLT
2	2	AN960-416		WASHER
2	2	AN4-5A		BOLT
2	2	AN4-4A		BOLT
2	2	78620-01	04	CLAMP ASSEMBLY
2	2	82723-01	03	BRACKET
1		82718-03-02	02	STEP ASSEMBLY (LH)
	1	82718-03-01	02	STEP ASSEMBLY (RH)
\		82752-01-02	01	LEFT HAND INSTALLATION
	\	82752-01-01	01	RIGHT HAND INSTALLATION

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

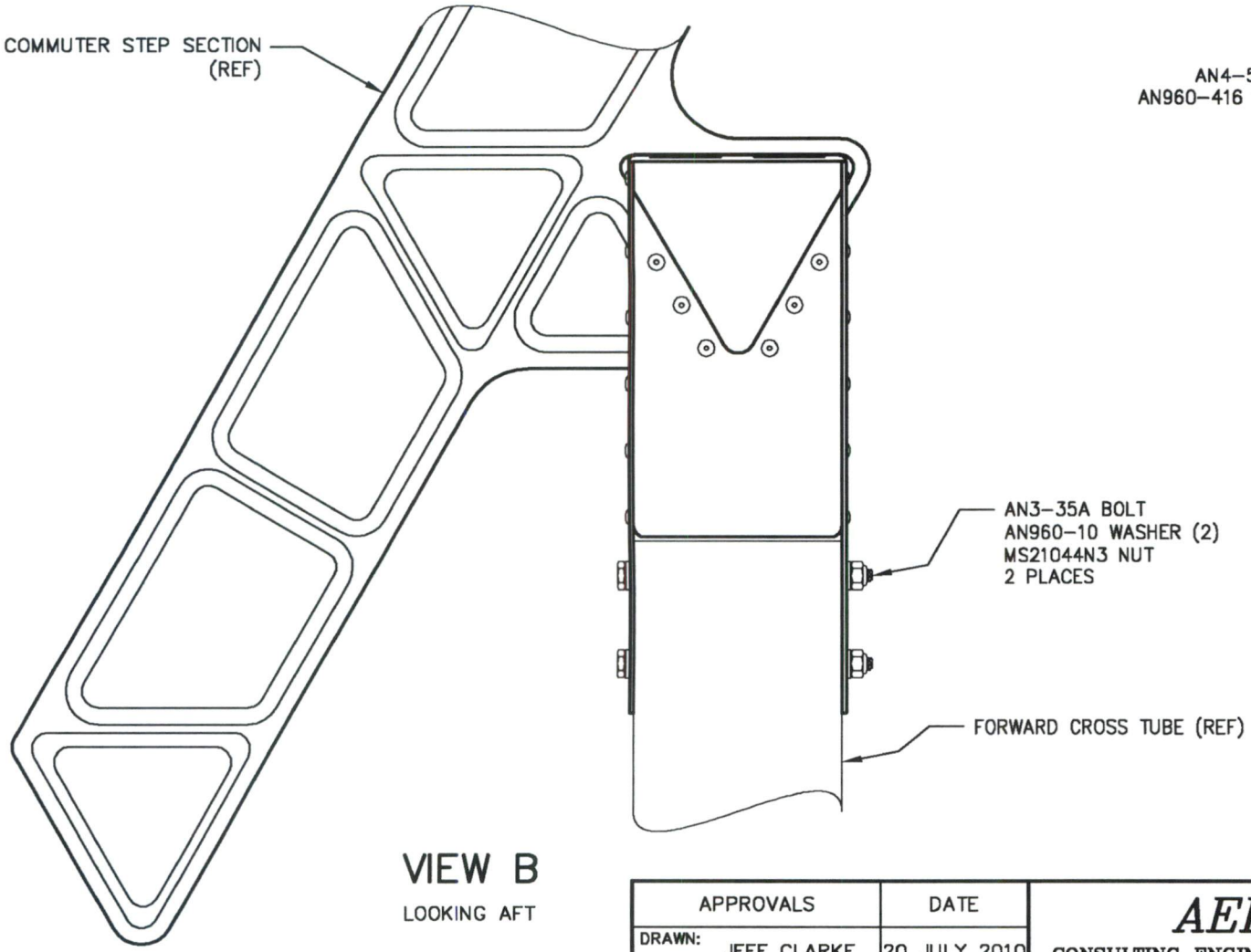
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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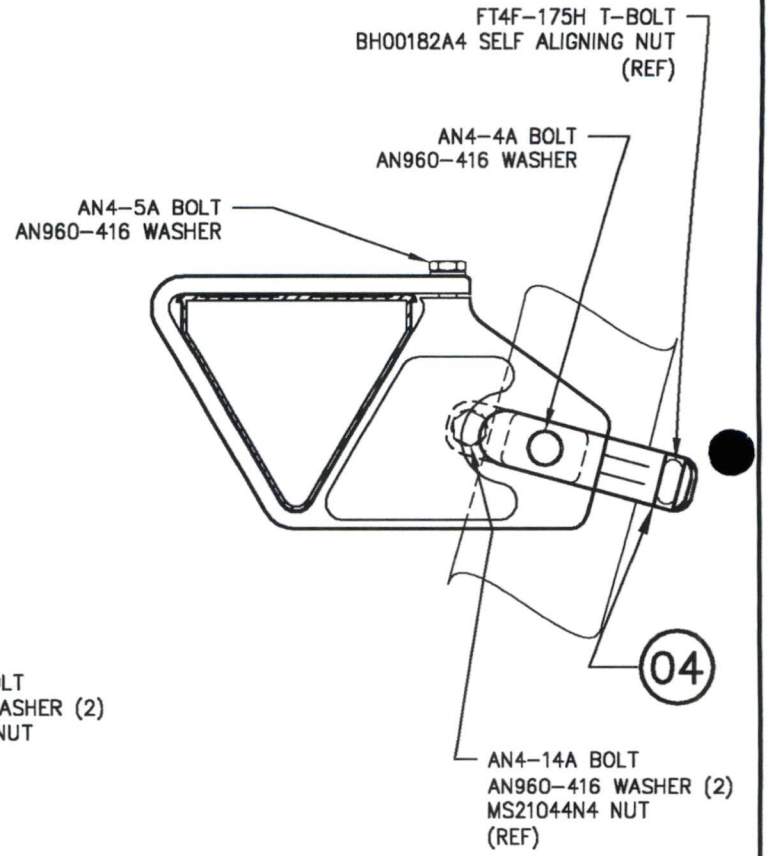
EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 3	A4	82752	0



VIEW B

LOOKING AFT



VIEW C

LOOKING AFT
TYPICAL, FORWARD AND AFT CROSS TUBE

APPROVALS	DATE
DRAWN: JEFF CLARKE	20 JULY 2010
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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FIXED CABIN STEP
FULL LENGTH COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 3	A4	82752	0

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	CREATED FROM 82709, REV. 0	BJC	20/07/10

NOTES

1. REMOVE EXISTING STEP CAP FROM END OF SKID TUBE. FILL VOID WITH 2 PART POLYURETHANE FOAM. REMOVE EUROCOPTER "VERTICAL STEP" IF FITTED. PLUG HOLES IN SKID TUBE WITH CHERRY BLIND RIVETS.

2. TORQUE AN3 BOLTS TO 20 – 25 INCH–POUNDS.
   TORQUE AN4 BOLTS TO 50 – 70 INCH–POUNDS.

3. THIS INSTALLATION IS NOT COMPATIBLE WITH AERO DESIGN LTD. QUICK RELEASE CARGO BASKET INSTALLATIONS IN ACCORDANCE WITH STC SH08–16. THIS INSTALLATION MAY BE APPLIED TO THE OPPOSITE SIDE WHEN A QUICK RELEASE CARGO BASKET IS INSTALLED.

4. THIS INSTALLATION MAY BE APPLIED TO THE RIGHT AND/OR LEFT SIDES. WEIGHT AND BALANCE IS GIVEN FOR RIGHT SIDE, LATERAL ARM IS NEGATIVE FOR LEFT SIDE.

WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (KG)	LONGITUDINAL ARM (MM)	LONGITUDINAL MOMENT (KG–MM)	LATERAL ARM (MM)	LATERAL MOMENT (KG–MM)
01	FULL LENGTH COMMUTER STEP INSTALLATION	8.1	2325	18727	1044	8410

WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
01	FULL LENGTH COMMUTER STEP INSTALLATION	17.8	91.5	1629.4	41.1	731.7

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TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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EUROCOPTER AS350 & AS355 SERIES
FIXED CABIN STEP
FULL LENGTH COMMUTER STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	82752	0

AS350 & AS355 SERIES HELICOPTERS

FLIGHT MANUAL SUPPLEMENT
for the
INSTALLATION of the AERO DESIGN QUICK RELEASE MAINTENANCE STEP

TCCA Supplemental Type Certificate No. SH09-38
FAA Supplemental Type Certificate No. SR02770NY

Sections I, II, III, IV, and V of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section II, Limitations, is mandatory. Section VI and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.

Table of Contents

I	General	3
II	Limitations	3
III	Emergency ProCedures	3
IV	Normal Procedures	3
V	Performance	3
VI	Installation / removal instructions	4
VII	Weight and Balance	6

Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	By
0	4 Aug 2009	None		
1	5 Jan 2010	1, 2, 4-8		
2	16 June 2010	1, 2, 4-7		

I GENERAL

No change.

II LIMITATIONS

No change.

III EMERGENCY PROCEDURES

No change.

IV NORMAL PROCEDURES

No change.

V PERFORMANCE

No change.

VI INSTALLATION / REMOVAL INSTRUCTIONS

The attachment provisions are installed in accordance with Supplemental Type Certificate SH08-16. The maintenance step is installed in accordance with drawing 82701.

There are three configurations approved for flight:
1) Step in the upper (normal) position or lower (stowed) position.
2) Step in the lower (stowed) position with a cargo basket installed.
3) Step removed, leaving the attachment provisions in place.

Logbook entry indicating installation or removal of step and which weight and balance amendment is in effect is required when step is installed or removed.

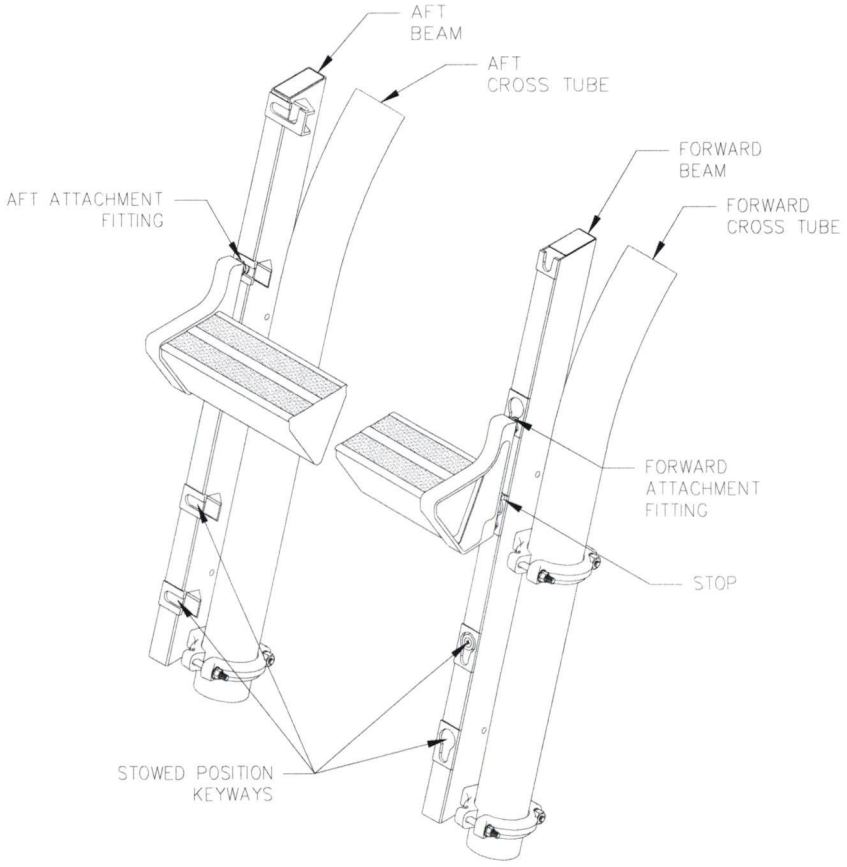


Figure 1 – Step Attachment Features

1. Installation - Refer to Figure 1.

   a) Slide step aft attachments fittings into keyways in aft beam.

   b) At forward end of step, lift step until lower attachment fitting hits stop.

   c) Push step attachment fittings into keyways and slide down until locked.

2. Removal - Refer to Figure 1.

   a) Pull knob on forward beam that is retaining step and lift step until forward attachment fittings are free of keyways.

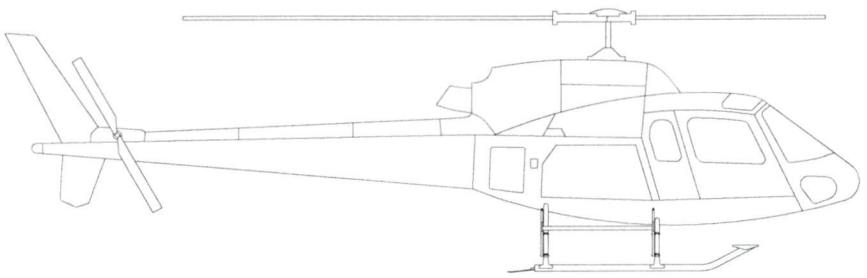
   b) Slide step forward until free of keyways on aft beam.

VII WEIGHT AND BALANCE

1. MAINTENANCE STEP 82701.

The following weight and balance is for the quick release maintenance step installed in accordance with drawing 82701. Upper (normal) and lower (stowed) positions are provided, either position is approved for flight.

Weight and balance is for Maintenance Step only. Refer to Flight Manual Supplement FMS764.91 for weight and balance for mounting provisions.



Quick Release Maintenance Step

Standard Units

Provisions Configuration	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
Right Hand						
High	Step	4.0	136.0	544.0	37.6	150.4
	Step (stowed)	4.0	136.0	544.0	40.3	161.2
Low	Step	4.0	136.0	544.0	38.3	153.2
	Step (stowed)	4.0	136.0	544.0	41.1	164.4
Eurocoper Pod	Step	4.0	136.0	544.0	40.3	161.2
Compatible	Step (stowed)	4.0	136.0	544.0	43.1	172.4
Left Hand						
High	Step	4.0	136.0	544.0	-37.6	-150.4
	Step (stowed)	4.0	136.0	544.0	-40.3	-161.2
Low	Step	4.0	136.0	544.0	-38.3	-153.2
	Step (stowed)	4.0	136.0	544.0	-41.1	-164.4
Eurocoper Pod	Step	4.0	136.0	544.0	-40.3	-161.2
Compatible	Step (stowed)	4.0	136.0	544.0	-43.1	-172.4

Metric Units

Provisions Configuration	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		Kg	mm	mm-Kg	mm	mm-Kg
Right Hand						
Low	Step	1.8	3454	6252	973	1751
	Step (stowed)	1.8	3454	6252	1044	1890
High	Step	1.8	3454	6252	955	1729
	Step (stowed)	1.8	3454	6252	1024	1853
Eurocoper Pod	Step	1.8	3454	6252	1024	1853
Compatible	Step (stowed)	1.8	3454	6252	1095	1981
Left Hand						
Low	Step	1.8	3454	6252	-973	-1751
	Step (stowed)	1.8	3454	6252	-1044	-1890
High	Step	1.8	3454	6252	-955	-1729
	Step (stowed)	1.8	3454	6252	-1024	-1853
Eurocoper Pod	Step	1.8	3454	6252	-1024	-1853
Compatible	Step (stowed)	1.8	3454	6252	-1095	-1981

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Maintenance Peg Step on Eurocopter AS350 & AS355 Series**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-20**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 827.93)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82707**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA827.93, Rev. 2)
A527.2 (b) Practical arrangement *(b)* The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
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A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
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A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
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A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
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A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-3
A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections *(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment *(e)* Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc *(f)* All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-4
A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Section 4

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** June 29. 2010

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: _____ **Phone #** _____ **Email:** _____ **Mail Routing Symbol:** _____

Signature: _____ **Date:** _____ **NAPA Number** _____

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Quick Release Maintenance Step on Eurocopter AS350 & AS355 Series**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-20**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 827.91)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82701**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA827.91, Rev. 3)
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A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
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A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

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A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections *(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment *(e)* Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc *(f)* All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-4
A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

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A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Chapter 4

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** June 29. 2010

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name:_____ **Phone #** _____ **Email:** _____ **Mail Routing Symbol:** _____

Signature: _____ **Date:** _____ **NAPA Number** _____

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Fixed Cabin Step on Eurocopter AS350 & AS355 Series**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-20**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 827.92)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82705, 82706, 82709**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

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MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

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A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-8
A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections *(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
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A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

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BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** June 29. 2010

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name:_____ **Phone #** _____ **Email:** _____ **Mail Routing Symbol:** _____

Signature: _____ **Date:** _____ **NAPA Number** _____

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 827.93

EUROCOPTER AS350 & AS355 SERIES

MAINTENANCE PEG STEP

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Maintenance Peg Step installed in accordance with AERO Design Ltd. Document Control List DCL827-2, Revision 3, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 2
Date: 28 June 2010

AERO Design Ltd.
Engineering Consultants

2013 – 39th Avenue N.E., Calgary, Alberta T2E 6R7
Phone: (403) 250-8027
Fax: (403) 250-8333
E-Mail: info@aerodesign.ca

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
0	4 August 2009		Original Issue
1	17 December 2009		
2	28 June 2010		

LIST OF EFFECTIVE PAGES

List of Revisions

Revision 0 (Original Issue)	4 August 2009
Revision 1	17 December 2009
Revision 2	28 June 2010

List of Effective Pages

Description	Pages	Revision No.
Cover	1	2
Revision Record/List of Effective Pages	2	2
Table of Contents	3	2
00-00-00	4-6	2
04-00-00	7	0
05-00-00	8-9	2
25-50-00	10-12	2

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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Maintenance Peg Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Maintenance Peg Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

The Maintenance Peg Step (82707-01/-02) is not compatible with Attachment Provisions in accordance with STC SH08-16. A peg step is included as an integral part of the Attachment Provisions. The Maintenance Peg Step may be installed on the opposite side to the Attachment Provisions.

0-5 GENERAL DESCRIPTION

The Maintenance Peg Step Installation (82707-01/-02) consists of a fitting attached to the aft cross tube with a tube that sticks out inboard and aft from the cross tube. The Maintenance Peg Step is required to aid access to the helicopter for maintenance activities.

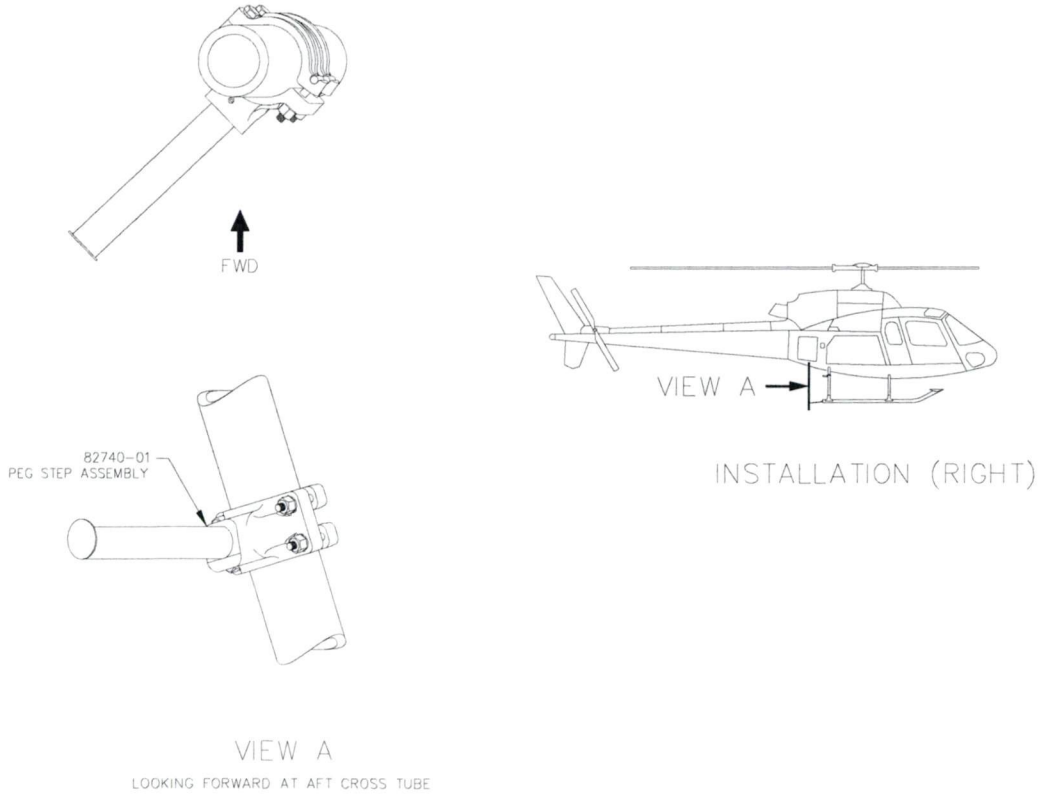


Figure 0-1 – Maintenance Peg Step Installation

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Maintenance Peg Step.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Maintenance Peg Step.

Daily Inspection

1. Inspection Area: Step
   a) Inspect the Step for condition and security.

100 Hour or Annual Inspection

1. Inspection Area: Step
   a) Visually inspect all mounting hardware for condition and security.
   b) Visually inspect step for cracks, corrosion or other damage.
   c) Visually inspect step tube attachment to socket fitting. Step tube must not be loose in socket.

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Maintenance Peg Step (82707 Configuration)

Part	Type of Damage	Max. Allowable	Repair
Step Tube	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks	None	N/A
	Permanent bend	*Note	None
Fitting	Corrosion	0.030" deep	Blend up to 0.030" deep with scotchbrite.
	Scratches / Nicks	0.060" deep x 0.5" long	Blend up to 0.060" deep with scotchbrite.
	Cracks	None	N/A
	Elongation of socket hole	None	N/A

*Note: Minor bending of the step tube that does not cause the tube to become loose in the socket is acceptable.

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

The step tube has a strip of 1" wide 3M Safety-Walk grip tape applied to the top surface. If the grip tape is damaged replace with equivalent grip tape, or apply Randolph X1567 Wingwalk grip paint or equivalent.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Maintenance Peg Step Installation may be applied to the right and/or left side of the helicopter.

25-1 STEP INSTALLATION

Configuration: 82701-01/-02

1. Locate Step Assembly 82740-01 on aft cross tube. Fasten one side with two (2) AN4-14A Bolts, AN960-416 Washers, and MS21044N4 Nuts; fasten opposite side with two (2) FT4F-175H T-Bolts, AN960-416 Washers and MS21044N4 Nuts. Rotate step until horizontal, approximately 45 degrees to the cross tube. Torque nuts to 50-70 in-lbs.

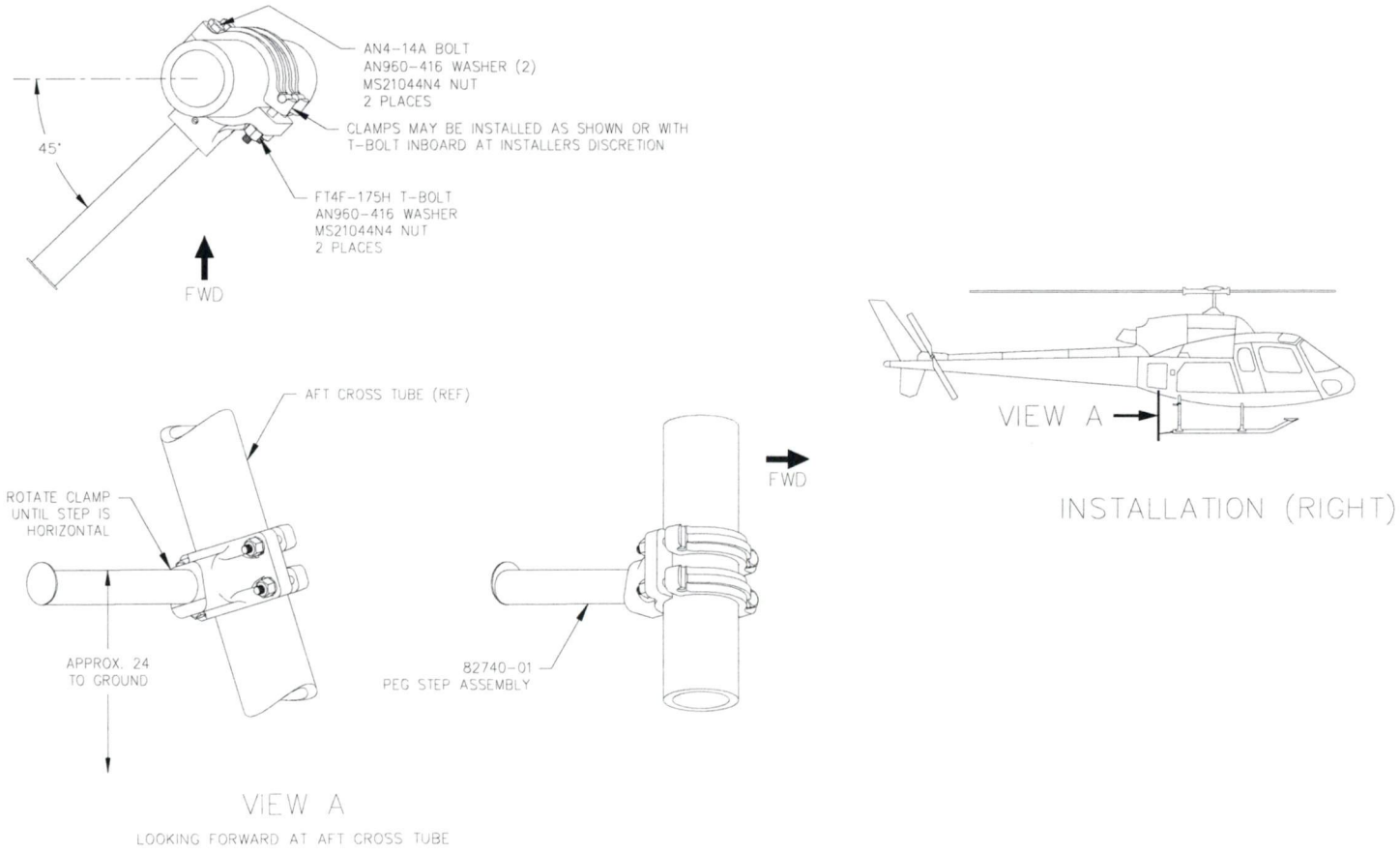


Figure 2 – Maintenance Peg Step Attachment Details

25-2 STEP REMOVAL

Refer to Figure 2.

1. Remove AN4-14A Bolt, FT4F-175H T-Bolt, AN960-416 Washers, and MS21044N4 Nuts attaching Step Assembly to aft cross tube. Remove Step Assembly.

25-3 WEIGHT AND BALANCE

82707 Configuration

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82707-01	Maintenance Peg Step Inst'n (Right)	1.0	163.8	163.8	32.5	32.5
82707-02	Maintenance Peg Step Inst'n (Left)	1.0	163.8	163.8	-32.5	-32.5

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	Moment
		kg	mm	mm-kg	mm	mm-kg
82707-01	Maintenance Peg Step Inst'n (Right)	0.45	4160.5	1872.2	825.5	371.5
82707-02	Maintenance Peg Step Inst'n (Left)	0.45	4160.5	1872.2	-825.5	-371.5

25-4 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual for torque values not listed in this ICA.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 827.91

EUROCOPTER AS350 & AS355 SERIES

QUICK RELEASE MAINTENANCE STEP

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release Maintenance Step installed in accordance with AERO Design Ltd. Document Control List DCL827-1, Revision 4, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 3
Date: 28 June, 2010

AERO Design Ltd.
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RECORD OF REVISIONS

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3	28 June 2010		

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List of Revisions

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Revision 3	28 June 2010

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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Maintenance Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Maintenance Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

Quick Release Cargo Basket Installation:

The Quick Release Maintenance Step must be installed in the lower (stowed) position prior to installation of the AERO Design Ltd. Cargo Baskets in accordance with STC SH08-16.

0-5 GENERAL DESCRIPTION

The Quick Release Maintenance Step installation consists of a step assembly which is attached to quick release mounting provisions installed on the helicopter. These mounting provisions are capable of mounting various equipment including cargo baskets.

The step itself consists of an aluminum extrusion attached to brackets on the ends with fittings that lock into the quick release mechanism.

Two positions are provided: upper for use in maintenance activities and lower for stowing under a cargo basket.

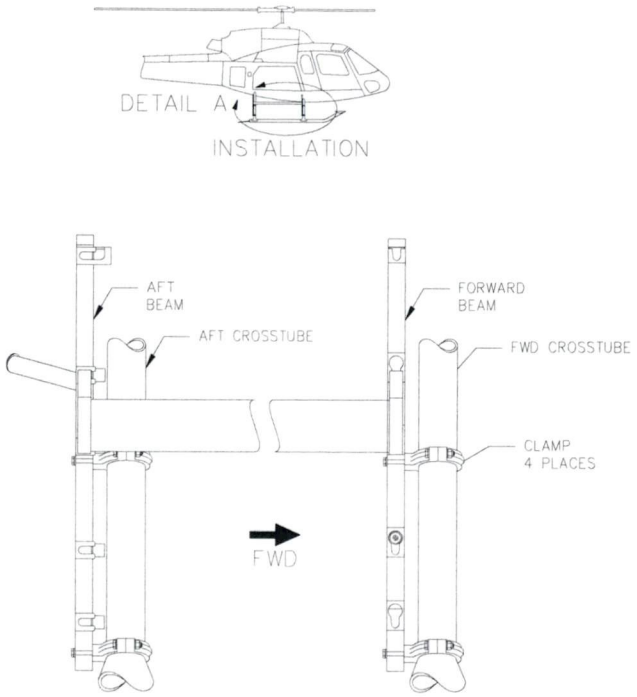


Figure 0-1 – AS350 Quick Release Maintenance Step Installation

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Quick Release Maintenance Step.

CHAPTER 5 – INSPECTION REQUIREMENTS

Refer to ICA764.90 for inspection requirements for the Quick Release Mounting Provisions not included below.

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Quick Release Maintenance Step.

Daily Inspection

1. Inspection Area: Step
   a) Inspect the step attachment to the beams for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.

100 Hour or Annual Inspection

Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for inspection of mounting provisions.

1. Inspection Area: Step
   a) Visually inspect welds attaching end brackets to step extrusion for cracks, corrosion or other damage.
   b) Visually inspect step for damage.
   c) Visually inspect lugs attaching the step to the beams for security and damage.

Special Inspections

1. Following a hard landing inspect the Quick Release Maintenance Step installation in accordance with the 100 hour or annual inspection listed above.
2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for further limits and repair instructions.

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Step Assembly

Part	Type of Damage	Max. Allowable	Repair
Step End Bracket	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Centre Step Section	Corrosion	2" x 2" x 0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long	Blend up to 0.010" deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" max at middle of step	None

2. Steel Beams

Part	Type of Damage	Max. Allowable	Repair
Steel Beam	Corrosion	0.015" deep	Blend up to 0.015" deep with scotchbrite.
	Scratches / Nicks	0.015" deep x 0.125" wide	Blend up to 0.015" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Elongation of Keyway	See figure 5-1 and 5-2	None
	Widening of slots	15/32" (0.469) diameter maximum (check with a 15/32" drill)	None

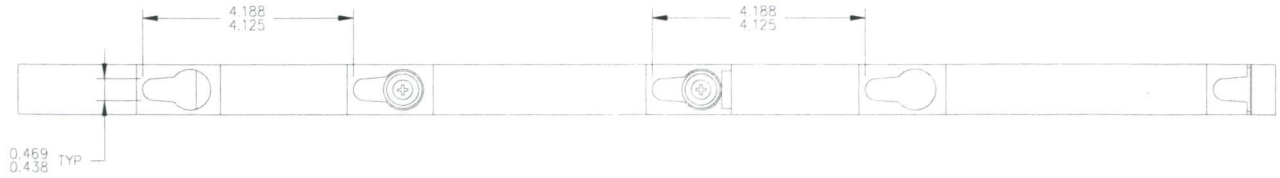


Figure 5-1 – Critical Keyway Dimensions (Forward Beam)

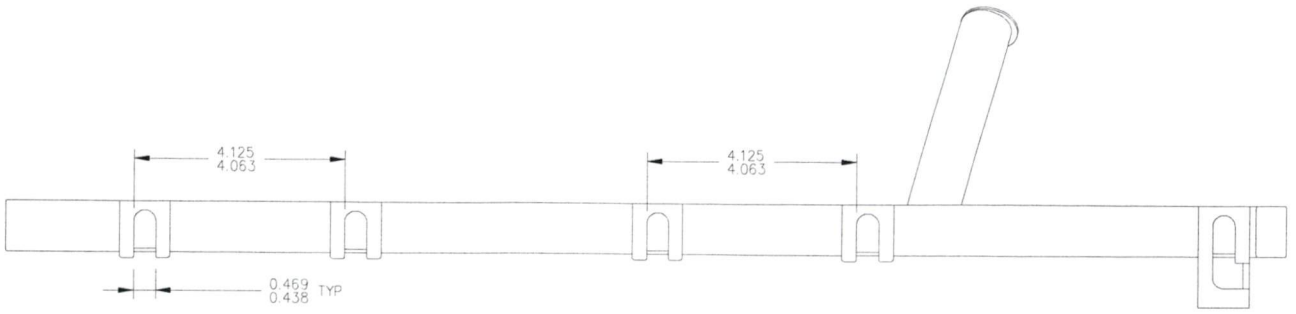


Figure 5-2 – Critical Keyway Dimensions (Aft Beam

3. Step Welds

Cracks up to 0.25" long may be repaired as follows:

a) Clean area of paint.

b) Grind away weld in area of crack.

c) T.I.G. weld per MIL-STD-2219 Class "C" using ER4043 filler rod. Do not grind flush.

d) Touch up paint as noted in section 5-3.

4. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

¼-28 insert: 3591-4CN375

3/8-24 insert: 3591-6CN563

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint. The tread area has two 1" strips of 3M Safety-Walk grip tape. If the grip tape is damaged, replace with equivalent grip tape, or apply Randolph X1567 Wingwalk grip paint or equivalent to the top surface.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Quick Release Maintenance Step Installation may be applied to the right and/or left side of the helicopter. Refer to the ICA for the Quick Release Cargo Basket for each specific model of helicopter for installation, inspection, repair and removal instructions for the mounting provisions.

25-1 STEP INSTALLATION

Refer to Figure 4.

1. Set aft attachment fittings into keyways in aft beam.
2. At forward beam, lift step until lower attachment fitting hits stop.
3. Push forward attachment fittings into keyways and slide step down until locked.

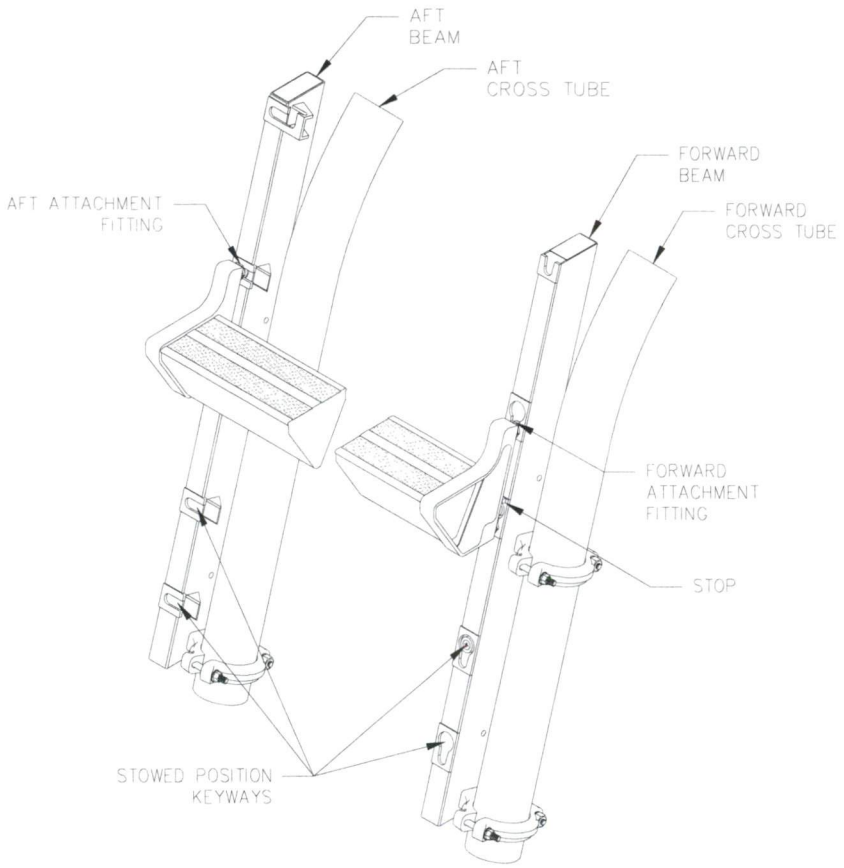


Figure 25-1 – Step Attachment

25-2 STEP REMOVAL

Refer to Figure 4.

1. Pull knob at bottom end of forward beam and lift step until forward attachment fittings are free of keyways.
2. Slide step forward until free of keyways on aft beam.

25-3 WEIGHT AND BALANCE

Different weight and balance configurations are required for the pilot. The first is the installation of Mounting Provisions only. The second is Provisions and Step in the upper position. The third is Provisions and Step in the lower (stowed) position.

Standard

P/N *	Description	Weight	Longitudinal		Lateral **	
			arm	moment	arm	moment
	Low Provisions Configuration	lb	in	in-lb	in	in-lb
78602-01-XX	Low Provisions Installation	6.4	135.6	867.5	37.2	238.0
82716-01	Maintenance Step	4.0	136.0	544.0	38.3	153.2
82701-01	**Step Installation**	**10.4**	**135.7**	**1411.5**	**37.6**	**391.2**
78602-01-XX	Low Provisions Installation	6.4	135.6	867.5	37.2	238.0
82716-01	Maintenance Step (stowed)	4.0	136.0	544.0	41.1	164.4
82701-01	**Step Installation (stowed)**	**10.4**	**135.6**	**1411.5**	**38.7**	**402.4**
	High Provisions Configuration					
78602-02-XX	High Provisions Installation	6.4	135.6	867.5	36.5	233.8
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	37.6	150.4
82701-01	**Step Installation**	**10.4**	**135.6**	**1411.5**	**36.9**	**384.2**
78602-02-XX	High Provisions Installation	6.4	135.6	867.5	36.5	233.8
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	40.3	161.2
82701-01	**Step Installation (stowed)**	**10.4**	**135.6**	**1411.5**	**38.0**	**395.0**
	Eurocopter Pod Compatible Configuration					
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	6.8	135.4	921.0	38.8	263.6
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	40.3	161.2
82701-01	**Step Installation**	**10.8**	**135.6**	**1465.0**	**39.3**	**424.8**
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	6.8	135.4	921.0	38.8	263.6
82716-01	Quick Release Maintenance Step	4.0	136.0	544.0	43.1	172.4
82701-01	**Step Installation (stowed)**	**10.8**	**135.6**	**1465.0**	**40.4**	**436.0**

* -XX indicates side. Right side is -01, Left side is -02.

**Lateral arm is negative for left side installation.

Table 25-1 – Quick Release Maintenance Step Weight and Balance

Metric

P/N *	Description	Weight	Longitudinal		Lateral **	
			arm	moment	arm	moment
	Low Provisions Configuration	kg	mm	mm-kg	mm	mm-kg
78602-01-XX	Low Provisions Installation	2.9	3443	9971	945	2735
82716-01	Maintenance Step	1.8	3454	6252	973	1751
82701-01	**Step Installation**	**4.7**	**3447**	**16223**	**955**	**4496**
78602-01-XX	Low Provisions Installation	2.9	3443	9971	945	2735
82716-01	Maintenance Step (stowed)	1.8	3454	6252	1044	1890
82701-01	**Step Installation (stowed)**	**4.7**	**3447**	**16223**	**983**	**4625**
	High Provisions Configuration					
78602-02-XX	High Provisions Installation	2.9	3443	9971	928	2688
82716-01	Quick Release Maintenance Step	1.8	3454	6252	955	1729
82701-01	**Step Installation**	**4.7**	**3447**	**16223**	**938**	**4416**
78602-02-XX	High Provisions Installation	2.9	3443	9971	928	2688
82716-01	Quick Release Maintenance Step	1.8	3454	6252	1024	1853
82701-01	**Step Installation (stowed)**	**4.7**	**3447**	**16223**	**965**	**4540**
	Eurocopter Pod Compatible Configuration					
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	3.1	3440	10585	985	3030
82716-01	Quick Release Maintenance Step	1.8	3454	6252	1024	1853
82701-01	**Step Installation**	**4.9**	**3445**	**16837**	**999**	**4882**
78603-01-XX	Eurocopter Pod Compatible Provisions Installation	3.1	3440	10585	985	3030
82716-01	Quick Release Maintenance Step	1.8	3454	6252	1095	1981
82701-01	**Step Installation (stowed)**	**4.9**	**3445**	**16837**	**1025**	**5011**

* -XX indicates side. Right side is -01, Left side is -02.

**Lateral arm is negative for left side installation.

Table 25-2 – Quick Release Maintenance Step Weight and Balance

25-4 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual for torque values not listed in this ICA.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 827.92

EUROCOPTER AS350 & AS355 SERIES

FIXED CABIN STEPS

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Fixed Cabin Step installed in accordance with AERO Design Ltd. Document Control List DCL827-3, Revision 4, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 2
Date: 28 June 2010

AERO Design Ltd.
Engineering Consultants

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RECORD OF REVISIONS

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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Fixed Cabin Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Fixed Cabin Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

The Long Fixed Cabin Step (82705-01) and Long Fixed Commuter Cabin Step (82751-01-XX) are NOT compatible with the AERO Design Ltd. Long Cargo Basket installed in accordance with STC SH08-16 (drawing 78401), but may be installed on the opposite side of the helicopter to the Long Cargo Basket.

The Short Fixed Cabin Step (82706-01) and Short Fixed Commuter Cabin Step (82750-01-XX) are compatible with all AERO Design Ltd. Cargo Baskets installed in accordance with STC SH08-16 in any mounting configuration.

The Full Length Cabin Step (82709-01) and Full Length Commuter Cabin Step (82752-01-XX) are NOT compatible with any AERO Design Ltd. Cargo Baskets installed in accordance with STC SH08-16, but may be installed on the opposite side of the helicopter to the Cargo Basket.

0-5 GENERAL DESCRIPTION

The Fixed Cabin Step installation consists of a step assembly which is attached to the forward end of the skid tube, running aft to the aft cross tube (full length configuration), to the forward cross tube (long configuration), or a bracket attached to the skid tube located under the door (short configuration). The different configurations are provided to accommodate AERO Design Ltd. Quick Release Cargo Baskets while providing the longest step possible for access to the cabin.

The step itself consists of an aluminum extrusion attached to a sheet metal assembly that attaches to the forward end of the skid tube. Aluminum brackets are used to attach the aft end.

The commuter step is an additional section added to the basic step that provides 3 steps up to the cabin. The steps are similar to the non-commuter configuration, but are reinforced at the forward end.

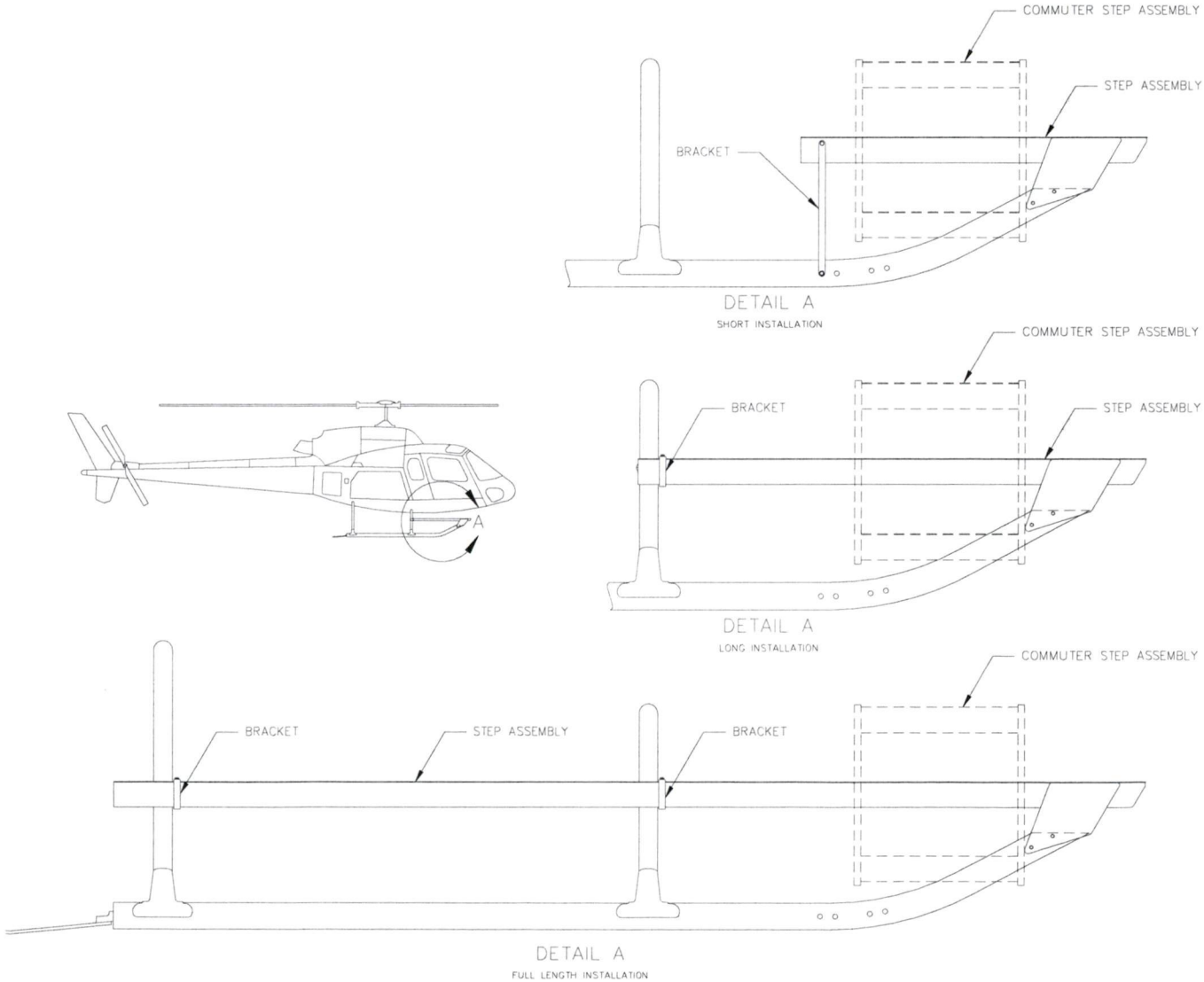


Figure 0-1 – AS350 Fixed Cabin Step Installations

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Fixed Cabin Steps.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Fixed Cabin Step.

Daily Inspection

1. Inspection Area: Step
   a) Full Length step only: Inspect the bracket and clamp attaching the step to the aft cross tube for condition and security.
   b) Long and Full Length steps only: Inspect the bracket and clamp attaching the step to the forward cross tube for condition and security.
   c) Short step only: Inspect bracket attaching aft end of step to skid tube for condition and security.
   d) Inspect the forward step attachment sheet metal bracket for condition and security.
   e) Commuter steps only: Inspect the attachments of the commuter step section to the basic step for condition and security.

100 Hour or Annual Inspection

1. Inspection Area: Step
   a) Visually inspect all mounting hardware for condition and security.
   b) Visually inspect step, mounting brackets, and clamps for condition and security.
   c) Long and Full Length steps only: Check clamps for slipping on the cross tube(s). Step should be parallel to the ground (+/- 0.25"), use height at attachment to forward tip of skid tube as a reference.

Special Inspections

1. Following a hard landing inspect the Fixed Cabin Step installation in accordance with the 100 hour or annual inspection listed above.
2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Step Assembly (including commuter step section)

Part	Type of Damage	Max. Allowable	Repair
Brackets, Clamps	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Step Section	Corrosion	2" x 2" x 0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long	Blend up to 0.010" deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" max at middle of step	None

2. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

¼-28 insert: 3591-4CN375

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

The tread areas have two strips of 3M Safety-Walk grip tape. If the grip tape is damaged replace with equivalent grip tape, or apply Randolph X1567 Wingwalk grip paint or equivalent to the top surface.

2. Brackets / Clamps

The brackets and clamps are supplied painted white. If the paint is damaged, touch up with white polyurethane paint.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Fixed Cabin Step Installation may be applied to the right and/or left side of the helicopter.

Installation of the Commuter Step (any configuration) is identical to the standard installation. Commuter Steps are "sided" right and left. The side is identified in the part number by the last dash number: -01 is Right, -02 is Left.

25-1 SHORT STEP INSTALLATION

Configuration: 82706-01 (standard), 82750-01-XX (commuter)

Refer to Figure 25-1 and 25-2.

1. Remove existing bolt, nut, and cups from last float provision hole at forward end of skid tube.
2. Insert Bushing 82733-02 into hole in skid tube. Set Bracket 82733-01 over bushing. Insert AN4-42A bolt with AN960-416 washer through bracket and bushing. Install AN960-416 washer and MS21044N4 nut on bolt. Do not tighten nut.
3. Set step assembly (82715-01 standard, 82718-01-XX commuter) on bracket. Install AN4-42A Bolt, AN960-416 Washers, and MS21044N4 Nut through bushing in step. Do not tighten nut.

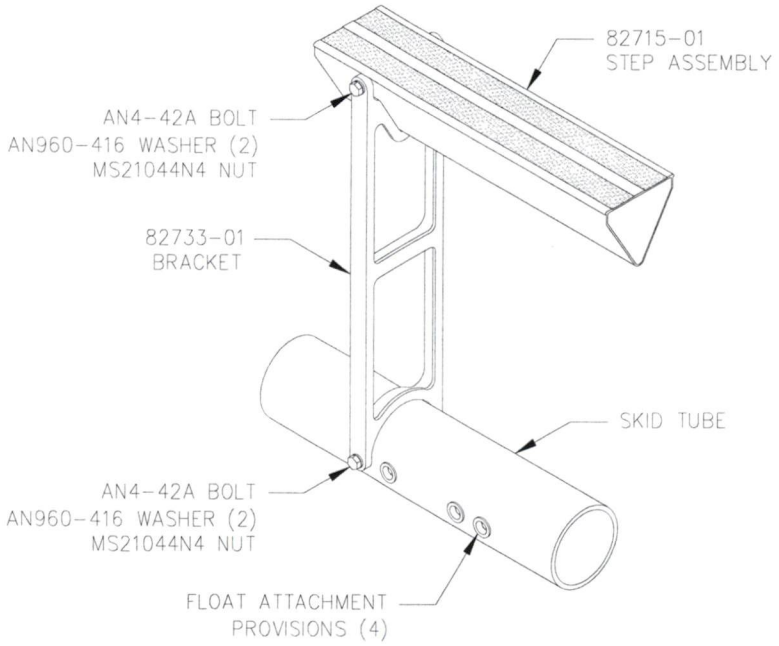


Figure 25-1 – Short Step Aft Attachment

4. At the forward end of the step, install two (2) AN3-35A Bolts, AN960-10 Washers, and MS21044N3 Nuts through existing holes in forward end of skid tube.

5. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

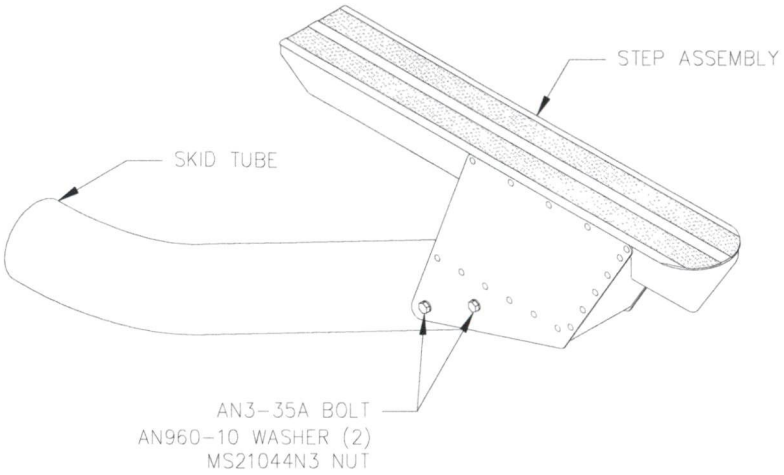


Figure 25-2 – Forward Step Attachment

25-2 SHORT STEP REMOVAL

Configuration: 82706-01 (standard), 82750-01-XX (commuter)

Refer to figure 25-1 and 25-2.

1. Remove AN3-35A Bolts, AN960-10 Washers, and MS21044N3 Nuts attaching forward end of step to skid tube.
2. Remove AN4-42A Bolt, AN960-416 Washers, and MS21044N4 Nut attaching step to bracket. Remove step.
3. Remove AN4-42A Bolt, AN960-416 Washers, and MS21044N4 Nut attaching bracket to skid tube. Remove bracket and bushing from skid tube.
4. Install 22201TK050-072X Screw, 350A41-1095-20 Cup (2), 23119TK050X Washer, and ASN52320BH050N Nut in hole in skid tube. Refer to Illustrated Parts book and Maintenance Manual.

25-3 LONG STEP INSTALLATION

Configuration: 82705-01 (standard), 82751-01-XX (commuter)

Refer to Figure 25-3 thru 25-5.

1. Attach Clamp Assembly 78620-01 to Bracket 82723-01 with one (1) AN4-4A Bolt and AN960-416 Washer. Orient clamp with T-bolt side inboard, and bracket forward. Torque bolt to 30-40 in-lbs. Slide bracket with clamp onto aft end of step.

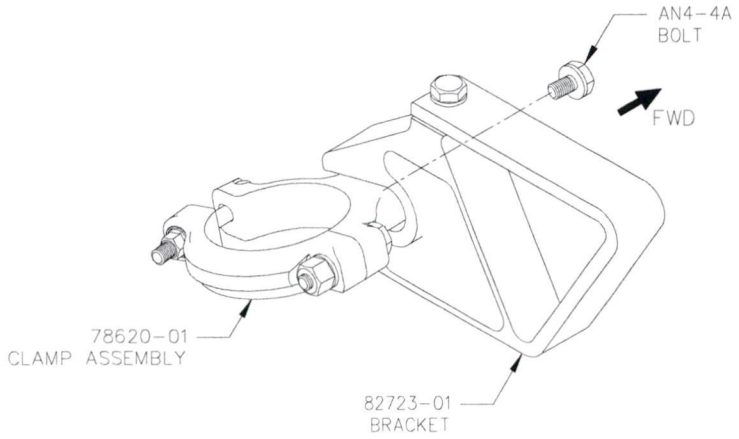


Figure 25-3 – Clamp and Bracket Assembly
(Right side shown, left side opposite)

2. Locate forward end of step assembly (82717-01 standard, 82718-02-XX commuter) on skid tube. Install two (2) AN3-35A Bolts, AN960-10 Washers, and MS21044N3 Nuts into existing holes in forward end of skid tube.

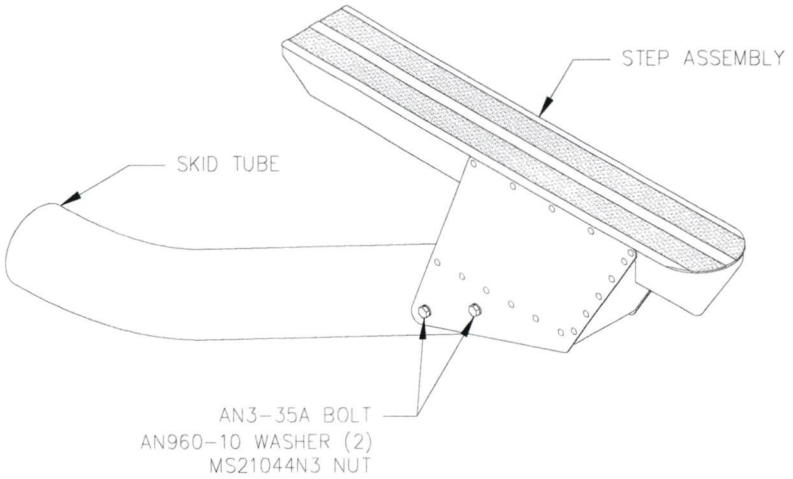


Figure 25-4 – Forward Step Attachment

3. Slide clamp and bracket assembly aft along step until clamp can be attached to forward cross-tube. Bracket can be opened with a flat head screwdriver if necessary.

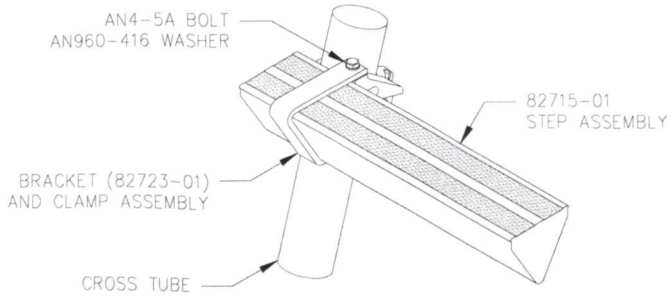


Figure 25-5 – Long Step Aft Attachment

4. Tighten clamp bolts to prevent the clamp from slipping on the cross tube.
5. Level the step parallel to the ground (+/- 0.25"). Nominal height is 17.5".
6. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

25-4 LONG STEP REMOVAL

Configuration: 82705-01 (standard), 82751-01-XX (commuter)

Refer to Figure 25-3 thru 25-5.

1. Remove AN3-35A Bolts, AN960-10 Washers, and MS21044N3 Nuts attaching forward end of step to skid tube.
2. Remove bolts securing clamp to cross tube.
3. Remove step assembly.

25-5 FULL LENGTH STEP INSTALLATION

Configuration: 82709-01 (standard), 82752-01-XX (commuter)

Refer to Figure 25-6 thru 25-8.

1. Attach Clamp 78620-01 to Bracket 82723-01 with AN4-4A Bolt and AN960-416 Washer. Orient clamp with T-bolt side inboard, and bracket on forward side of cross tube. Torque bolt to 30-40 in-lbs. Slide bracket with clamp onto aft end of step. See figure 25-6. Repeat for second Bracket.

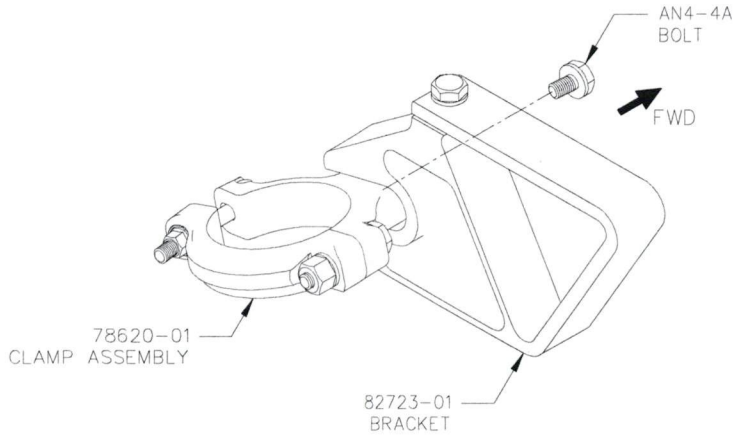


Figure 25-6 – Clamp and Bracket Assembly
(Right side shown, left side opposite)

2. Locate forward end of step assembly on forward end of skid tube. Install two (2) AN3-35A Bolt, AN960-10 Washers, and MS21044N3 Nut into existing holes in forward end of skid tube. See figure 25-7.

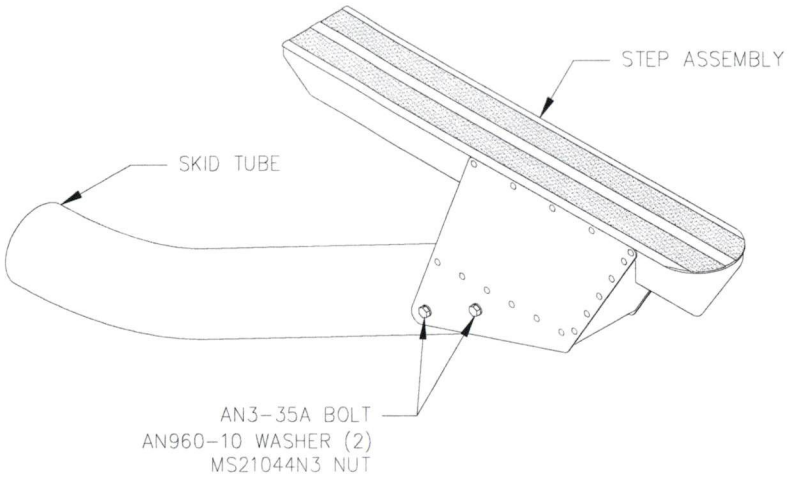


Figure 25-7 – Forward Step Attachment

3. Slide clamp and bracket (82723-01) assembly along step until clamp can be attached to forward cross-tube. Bracket can be opened with a flat head screwdriver if necessary. Repeat at aft cross tube. See Figure 25-8

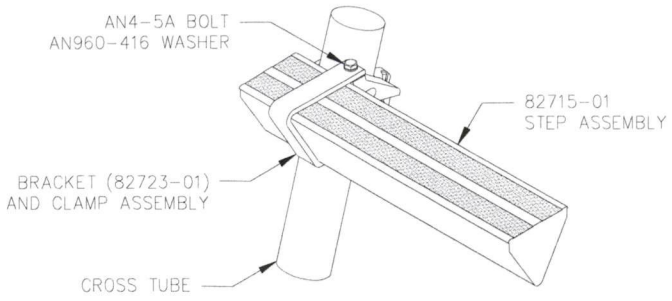


Figure 25-8 – Aft Step Attachment

4. Tighten clamp bolts to prevent the clamp from slipping on the cross tube.
5. Level the step parallel to the ground (+/- 0.25"). Nominal height is 17.5".
6. Tighten all hardware as follows:

   AN3 Bolts: 20-25 in-lbs

   AN4 Bolts: 50-70 in-lbs

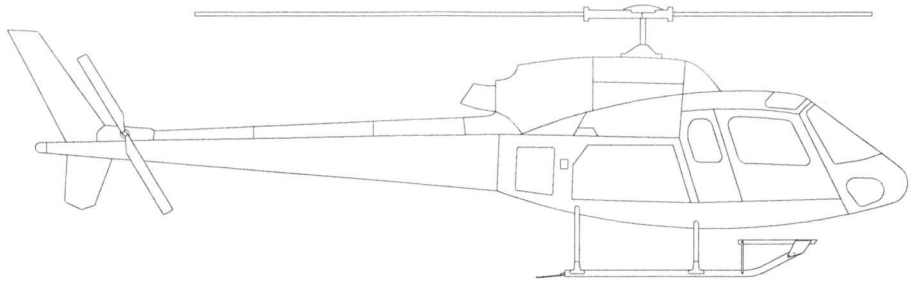
25-6 FULL LENGTH STEP REMOVAL

Configuration: 82709-01

Refer to figures 25-6 thru 25-8.

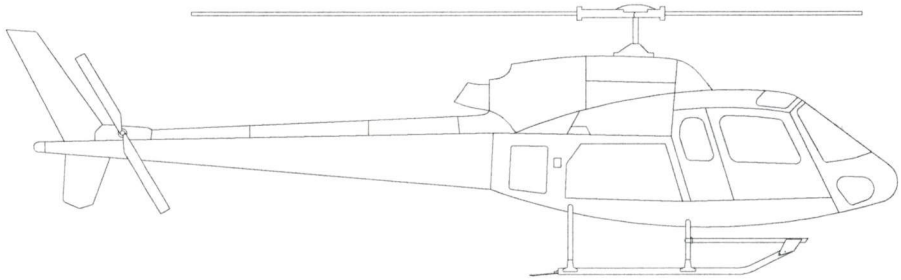
1. Remove fasteners from clamps on forward and aft cross tubes.
2. Remove AN3-35A bolts, washers and nuts attaching forward end of step to forward tip of skid tube.
3. Remove step assembly.

25-7 BILL OF MATERIALS



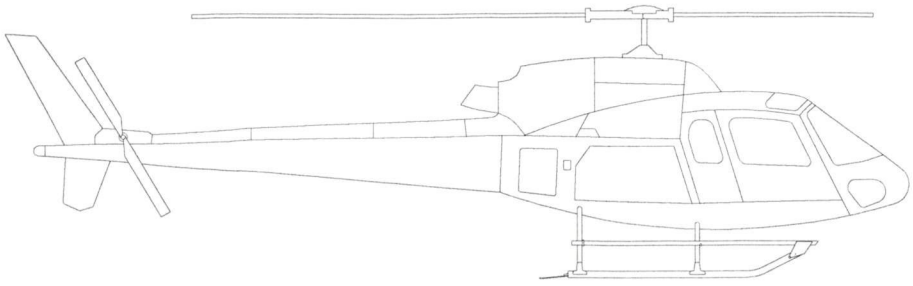
SHORT CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82706-01	**Short Cabin Step Installation**
. 1	82715-01	Step Assembly
. 1	82733-01	Bracket
. 1	82733-02	Bushing
. 2	AN4-42A	Bolt
. 4	AN960-416	Washer
. 2	MS21044N4	Nut
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



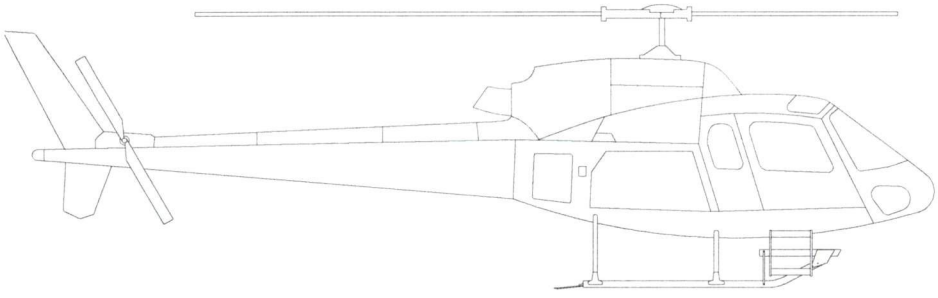
LONG CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82705-01	**Long Cabin Step Installation**
. 1	82717-01	Step Assembly
. 1	82723-01	Bracket
. 1	78620-01	Clamp Assembly
. 1	AN4-4A	Bolt
. 1	AN4-5A	Bolt
. 2	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



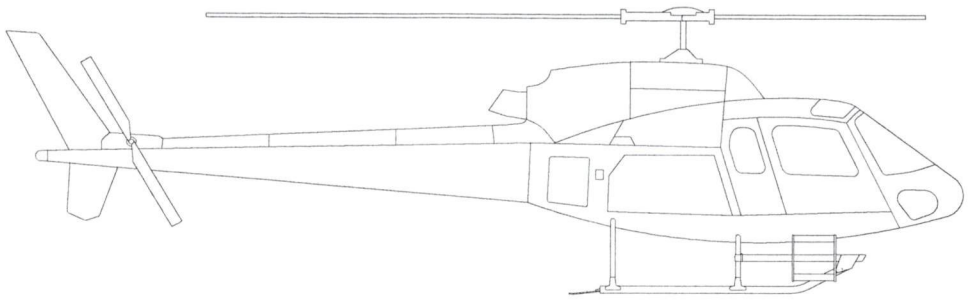
FULL LENGTH CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82709-01	**Full Length Cabin Step Installation**
. 1	82717-02	Step Assembly
. 2	82723-01	Bracket
. 2	78620-01	Clamp Assembly
. 2	AN4-4A	Bolt
. 2	AN4-5A	Bolt
. 4	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



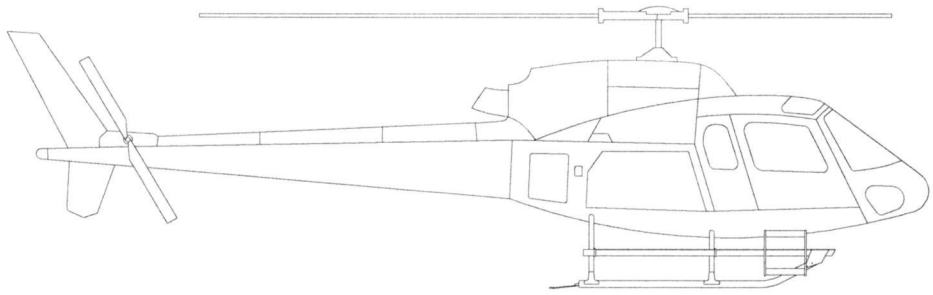
SHORT COMMUTER CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82750-01-01	**Short Commuter Cabin Step Installation (RH)**
	82750-01-02	**Short Commuter Cabin Step Installation (LH)**
. 1	82718-01-01	Step Assembly (RH)
. 1	82718-01-02	Step Assembly (LH)
. 1	82733-01	Bracket
. 1	82733-02	Bushing
. 2	AN4-42A	Bolt
. 4	AN960-416	Washer
. 2	MS21044N4	Nut
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



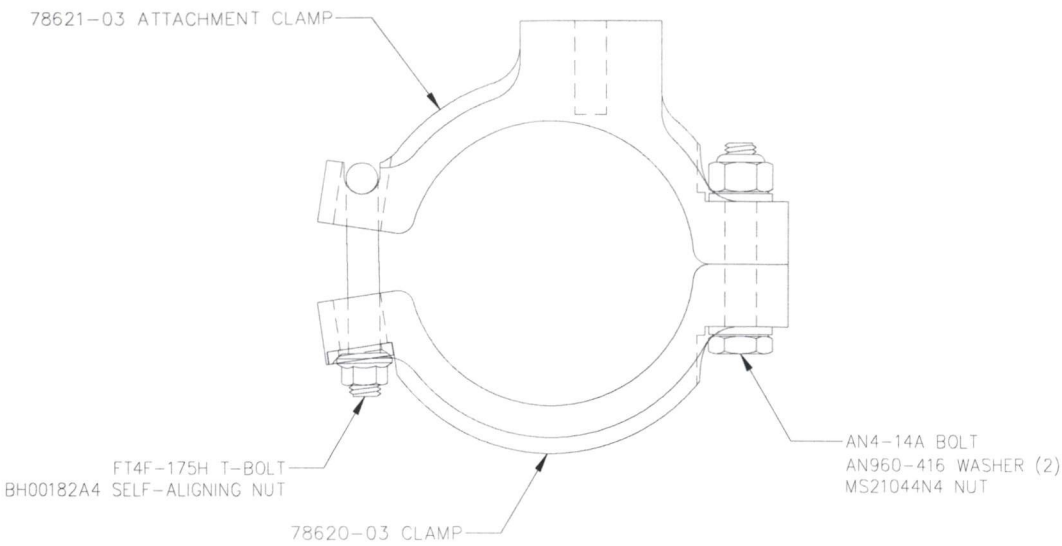
LONG COMMUTER CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82751-01-01	**Long Commuter Cabin Step Installation (RH)**
	82751-01-02	**Long Commuter Cabin Step Installation (LH)**
. 1	82718-02-01	Step Assembly (RH)
. 1	82718-02-02	Step Assembly (LH)
. 1	82723-01	Bracket
. 1	78620-01	Clamp Assembly
. 1	AN4-4A	Bolt
. 1	AN4-5A	Bolt
. 2	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



FULL LENGTH COMMUTER CABIN STEP INSTALLATION

Qty.	Part Number	Description
	82752-01-01	**Full Length Commuter Cabin Step Installation (RH)**
	82752-01-02	**Full Length Commuter Cabin Step Installation (LH)**
. 1	82718-03-01	Step Assembly (RH)
. 1	82718-03-02	Step Assembly (RH)
. 2	82724-01	Bracket
. 2	78620-01	Clamp Assembly
. 2	AN4-4A	Bolt
. 1	AN4-5A	Bolt
. 3	AN960-416	Washer
. 2	AN3-35A	Bolt
. 4	AN960-10	Washer
. 2	MS21044N3	Nut



CLAMP ASSEMBLY

Qty.	Part Number	Description
	78620-01	**Clamp Assembly**
. 1	78620-02	Attachment Clamp (with mounting pad)
. 1	78620-03	Clamp (no mounting pad)
. 1	AN4-14A	Bolt
. 2	AN960-416	Washer
. 1	MS21044N4	Nut
. 1	FT4F-175H	T-Bolt
. 1	BH00182A4	Self Aligning Nut

25-8 WEIGHT AND BALANCE

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82706-01	Short Cabin Step Installation	4.2	69.1	290.2	39.4	165.5
82705-01	Long Cabin Step Installation	5.0	76.2	381.0	39.4	197.0
82709-01	Full Length Cabin Step Installation	9.8	107.9	1057.4	39.4	386.1
82750-01-XX	Short Commuter Cabin Step Installation (-01 RH / -02 LH)	12.2	70.7	862.2	41.9	511.1
82751-01-XX	Long Commuter Cabin Step Installation (-01 RH / -02 LH)	13.0	73.3	953.0	41.7	542.6
82752-01-XX	Full Length Commuter Cabin Step Installation (-01 RH / -02 LH)	17.8	91.5	1629.4	41.1	731.7

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	Arm	moment
		kg	mm	mm-kg	Mm	mm-kg
82706-01	Short Cabin Step Installation	1.9	1755	3335	1000	1900
82705-01	Long Cabin Step Installation	2.3	1935	4378	1000	2260
82709-01	Full Length Cabin Step Installation	4.4	2741	12155	1000	4434
82750-01-XX	Short Commuter Cabin Step Installation (-01 RH / -02 LH)	5.5	1795	9910	1064	5874
82751-01-XX	Long Commuter Cabin Step Installation (-01 RH / -02 LH)	5.9	1862	10953	1060	6236
82752-01-XX	Full Length Commuter Cabin Step Installation (-01 RH / -02 LH)	8.1	2325	18727	1044	8410

Note: Lateral arms are given for right side installation. For installation on left side, lateral arms are negative.

25-9 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual for torque values not listed in this ICA.

AERO Design Ltd.

ENGINEERING REPORT

ER827.02

EURCOPTER AS350/AS355

CABIN STEPS

MAINTENANCE STEPS

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Approved by: E. Burgoin, P.Eng., DAR 290M

Revision 0, 18 June 2010

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1.0 INTRODUCTION

In order to reduce weight and ease fabrication, a new step extrusion has been produced. Steps using the new extrusion replace the existing cabin steps, and quick release maintenance steps. A new full length step running from the forward tip of the skid tube back to the aft cross tube is also added.

This report will demonstrate that the new steps are acceptable replacements for the existing approved steps.

2.0 REFERENCE TEXT

AERO Design Ltd. drawing 82701, 82705, 82706, 82709, 82750, 82751, 82752

AERO Design Ltd. Engineering Report ER827.01

3.0 BASIS OF CERTIFICATION

Eurocopter AS350 & AS355 Series, TCDS H-83/ H-87:

FAR 27, Amendment 27-20, plus select sections of later Amendments (AS355NP basis of certification).

This report demonstrates that the installation of the cabin and maintenance steps complies with the original basis of certification.

4.0 APPLICABILITY OF AIRWORTHINESS DIRECTIVES

Airworthiness Directives applicable to the Eurocopter AS350 and AS355 series were reviewed, and none were found to affect this project.

5.0 LOADS

5.1 Quick Release Maintenance Step

The Quick Release Maintenance Step is located external to the cabin. It cannot be reached to be occupied in flight, therefore the maneuvering loads applied are only due to the step weight itself (4.2 lbs).

W_{step} = 4.2 lbs — Weight of step (maintenance step)

n_{man_pos} = 3.5 — Limit positive maneuvering load factor (Ref: FAR 27.337)

n_{sf} = 1.5 — Safety Factor (Ref: FAR 27.303)

$n_{ult\_man\_pos} = n_{man\_pos} \times n_{sf}$

$n_{ult\_man\_pos} = 3.5 \times 1.5 = 5.25$ — Ultimate positive maneuvering load factor

$P_{ult\_man\_pos} = W_{step} \times n_{ult\_man\_pos}$

$P_{ult\_man\_pos}$ = 33.6 lbs — Ultimate positive maneuvering load

5.2 Fixed Cabin Steps

5.2.1 Inertia Loads

W_{step} = 9.8 lbs — Weight of full length step (82709-01)

$P_{ult\_man\_pos} = W_{step} \times n_{ult\_man\_pos}$

$P_{ult\_man\_pos}$ = 51.5 lbs — Ultimate positive maneuvering load

The cabin steps are not intended to be used in flight. As such, there is no requirement for the application of maneuvering inertia loads due to a person on the step. However, the step is checked for ultimate inertia load applied by one person to allow for the possibility of use during rappel or similar operations.

W_{person} = 170 lbs — Weight of person

$P_{ult\_man\_pos} = W_{person} \times n_{ult\_man\_pos}$

$P_{ult\_man\_pos}$ = 892.5 lbs — Ultimate positive maneuvering load applied to step by 1 person

5.2.2 Aerodynamic Loads

Drag

$A_f := 19.0 \cdot in^2$ Frontal Area of Fixed Cabin Steps

$V_{ne} := 155 \cdot knots$ Never Exceed Speed of AS350/AS355/EC135 (Highest of all models)

$V_d := \frac{V_{ne}}{0.9}$

$V_d = 172.2knots$ Design Dive Speed

$\rho := 0.002378 \frac{slug}{ft^3}$ Air Density at Sea Level

$C_{Do} := 2.0$ Coefficient of Drag (conservative)

$P_{drag} := \frac{\rho}{2} \cdot V_d^2 \cdot A_f \cdot C_{Do}$

$P_{drag} = 26.5lbf$ Limit drag at V_d

$n_{sf} := 1.5$ Factor of Safety

$P_{drag\_ult} := P_{drag} \cdot n_{sf}$

$P_{drag\_ult} = 39.7lbf$ Ultimate drag at V_d

Lift

$A_{lift} := 3.28 in \cdot 119 in$

$A_{lift} = 390.3in^2$ Planar area of step (full length step, 82709-01)

Coefficient of lift for round tubes relative to airflow varies from near 0 at 0 to 0.4 at about 60°.

$C_L := 0.4$ Coefficient of lift (Max. for a round tube, ~60° to air flow) (ref: Hoerner, Fig. 18)

$P_{lift} := C_L \cdot \frac{\rho}{2} \cdot V_d^2 \cdot A_{lift}$

$P_{lift} = 108.8lbf$ Limit lift on step at V_d

$P_{lift\_ult} := P_{lift} \cdot n_{sf}$

$P_{lift\_ult} = 163.2lbf$ Ultimate lift on step at V_d

6.0 STRUCTURAL ANALYSIS

6.1 Quick Release Maintenance Step

This step is not in a position to be used in flight. The aerodynamic loads will be smaller than for the cabin steps. By inspection, the step is sufficient to support the aerodynamic and maneuvering loads.

The Mounting Provisions on the AS350 have been tested to carry a cargo basket with 300 lbs of cargo at ultimate maneuvering load factor. Loads due to the maintenance step are not greater than the cargo basket loads. The Maintenance Step installation has been considered and is satisfactory for installation.

6.2 Fixed Cabin Steps

The aerodynamic drag load is very small and by inspection can be carried by the step assembly and its attachments.

6.2.1 Long Fixed Step

A Long Fixed Step Assembly was fabricated in accordance with drawing 82717. The step was installed on a scrap set of landing gear in accordance with drawing 82705. The step was loaded with 1250 lbs of lead shot (50 bags @ 25 lbs), evenly distributed over the surface of the step.



Figure 6.2.1 – Ultimate Maneuvering Load on Long Step Assembly

The step was inspected after the load was removed. The step section and bracket had no permanent deformation. The side plates at the forward end were found to have a slight

bow outwards, but had not failed. The clamp on the aft end did not slip down the cross tube.

The aerodynamic lift generated by the step is applied similar to the down load tested above, only upward. The downward test is sufficient to demonstrate the lift load.

The long fixed cabin step is satisfactory for installation.

6.2.2 Short Fixed Step

A Short Fixed Assembly was fabricated in accordance with drawing 82715. The step was installed on a scrap set of landing gear in accordance with drawing 82706. The step was loaded with 1000 lbs (40 bags @ 25 lbs) of lead shot, evenly distributed over the surface of the step.



Figure 6.2.2 – Ultimate Maneuvering Load on Short Step Assembly

With the load removed, the step and bracket were inspected. There was no permanent deformation found in any of the parts.

The aerodynamic lift generated by the step is applied similar to the down load tested above, only upward. The downward test is sufficient to demonstrate the lift load.

The short fixed cabin step is satisfactory for installation.

6.2.3 Full Length Cabin Step

A Full Length Fixed Step Assembly was fabricated in accordance with drawing 82717. The step was installed on a scrap set of landing gear in accordance with drawing 82709. The step was loaded with 1825 lbs of lead shot (73 bags @ 25 lbs), evenly distributed over the

surface of the step. A higher portion of the load was applied to the forward section (between the forward cross tube and the forward end) as this is the area that will be used the most. The forward section is identical to the Long Cabin Step tested above.



Figure 6.2.3 – Ultimate Maneuvering Load on Full Length Step Assembly

With the load removed, the step and brackets were inspected. The brackets did not slip down the skid tube. There was no permanent deformation or damage found on any of the parts.

The aerodynamic lift generated by the step is applied similar to the down load tested above, only upward. The downward test is sufficient to demonstrate the lift load.

The full length fixed cabin step is satisfactory for installation.

6.3 Commuter Steps

Commuter steps are essentially the same steps as tested above, with an additional section added to provide 3 steps up to the cabin. The forward sheet metal structure is reinforced by closing in the back. The basic steps have been demonstrated to carry ultimate maneuvering loads above. The steps are tested to ensure the torque applied by the commuter step due to one occupant at 2.5g load does not cause the attachments to fail.

W_{person} = 200 lbs	Weight of person
n = 2.5	Load Factor
$P_{commuter} = W_{person} \times n$	
$P_{commuter}$ = 500 lbs	Load on commuter step

6.3.1 Long Commuter Fixed Step

The aerodynamic drag load is very small and by inspection can be carried by the step assembly and its attachments.

A Long Commuter Step Assembly was fabricated in accordance with drawing 82718 and installed on a scrap set of landing gear in accordance with drawing 82751. The forward section of the step with the commuter section is identical on the Full Length Step installation. This test also applies to the Full Length Commuter Step configuration.

The top and bottom steps apply the same torque to the step attachments, the middle step applies no torque. The top step was loaded with 500 lbs of lead shot.



Figure 6.3.1 – Long Commuter Step Load Test

There was only minor deflection under load. When the load was removed the step and brackets were checked for permanent deformation or failure. There was none found.

The Commuter Step on the Long and Full Length configurations is acceptable for installation.

6.3.2 Short Commuter Step

The short step mounts with a different bracket than the long and full length steps, so it must be tested to ensure the torque will not cause the mounts to fail. It was determined after the previous test that the step must be shifted outboard. The side brackets were revised shift the step 4 inches outboard. The configuration of the aft attachment is more critical on the short step than on the long or full length steps.

The aerodynamic drag load is very small and by inspection can be carried by the step assembly and its attachments.

A Short Commuter Step Assembly was fabricated in accordance with drawing 82718 and installed on a scrap set of landing gear in accordance with drawing 82750. The bottom step is the farthest away from the attachments, therefore the down load is critical on the bottom step. The bottom step was loaded with 500 lbs of lead shot.

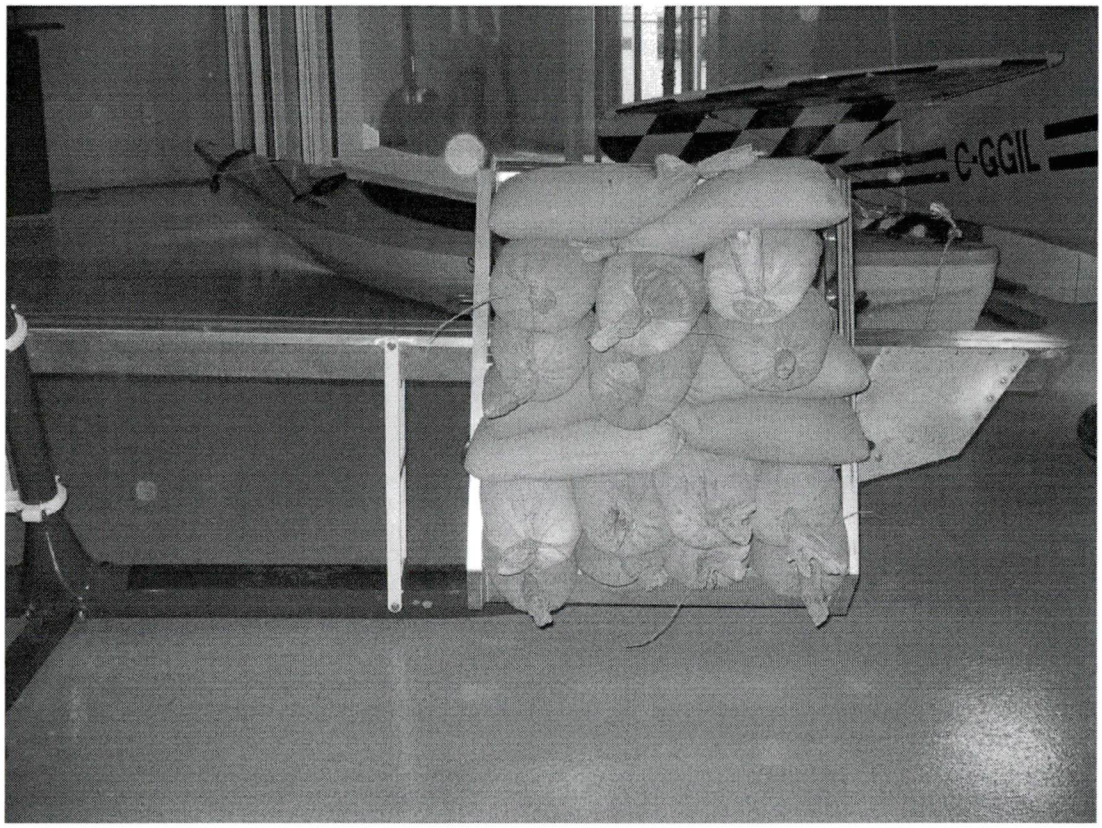


Figure 6.3.2 – Short Commuter Step Load Test

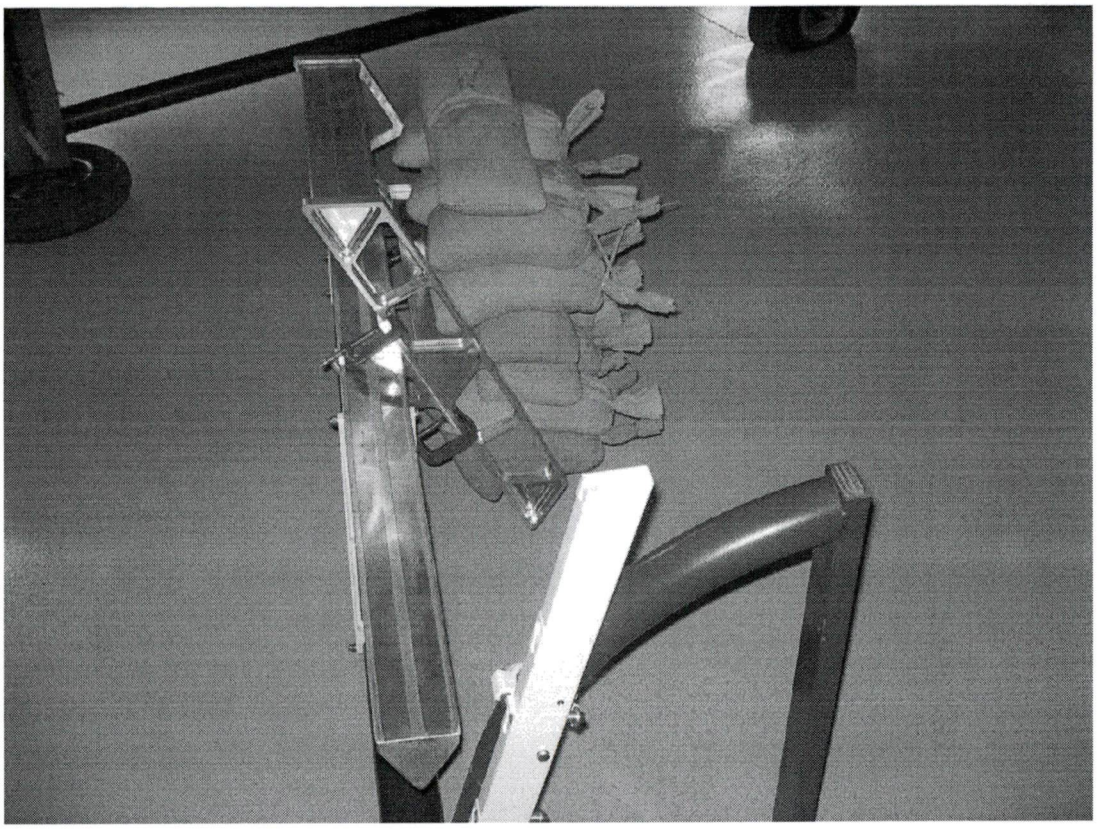


Figure 6.3.3 – Short Commuter Step Load Test

When the load was removed the step and brackets were checked for permanent deformation or failure. There was none found.

The Commuter Step on the Short, Long and Full Length configurations is acceptable for installation.

7.0 COMPLIANCE WITH 27.251 AND 27.629

The frontal and planar area of the step is significantly smaller than the area of the cargo basket which uses the same mounting provisions (for quick release maintenance step). The step section is a closed section so it is torsionally rigid and will not allow flexing between the attachments. The conclusion that can be drawn from these properties is that the aerodynamic loading or turbulence shedding from the step will be significantly less than from the basket, and are expected to be similar to the basic unmodified helicopter.

Flight testing in accordance with FTP827.03 and by Transport Canada Flight Test to verify the flutter and vibration qualities was performed.

Jeff Clarke

From: Staal, Jack [STAALJ@tc.gc.ca]
Sent: October 1, 2010 8:52 AM
To: 'Jeff Clarke'; Brulotte, Michel
Cc: Wickens, Murray
Subject: RE: C-10-0716 - AS350 Flight Steps Revision

Jeff,

I would prefer to see the company confirm flight to Vd prior to Michel flying but this is Michel's call before he flies.

At any rate I would support issuance of a flight permit. Flight to Vd. NAPA project C-10-0716.

Regards,
Jack Staal

From: Jeff Clarke [mailto:jeff@aerodesign.ca]
Sent: Thursday, September 30, 2010 10:46 AM
To: Staal, Jack; Brulotte, Michel
Subject: RE: C-10-0716 - AS350 Flight Steps Revision

Jack, Michel,

I have addressed the issues raised by Jack below (see insertions).

I am preparing the Flight Permit application for the AS350 steps to be flown by Michel next week. Ted discussed the flight testing with Michel. It was agreed that a company flight test would not be required. The tests will be looking for vibration/handling qualities up to Vd in the following configurations:

1. Full Length Step installation (82709-01) on both sides
2. Full Length Step installation (82709-01) on one side, Full Length Commuter Step installation (82752-01) opposite side
3. Full Length Commuter Step installation (82752-01) both sides
4. Long Step installation (82705-01) both sides
5. Long Step installation (82705-01) one side, Long Commuter Step installation (82751-01) opposite side
6. Short Step installation (82706-01) both sides
7. Short Step installation (82706-01) one side, Short Commuter Step installation (82750-01) opposite side

Please confirm this is acceptable. Let me know if you have any questions or concerns.

Thank you,

Jeff

From: Staal, Jack [mailto:STAALJ@tc.gc.ca]
Sent: September 10, 2010 3:35 PM
To: jeff@aerodesign.ca; Brulotte, Michel
Cc: ted@aerodesign.ca
Subject: FW: C-10-0716 - AS350 Flight Steps Revision

Hi Jeff,

I have been through my email, NAPA, and paper file records.

We have very little documentation on file and I feel it is premature to arrange the f/t date with Ottawa.
Some key issues,

-DCL (config control) – **emailed Sept 20**
-drawings (for conformity) – **uploaded in NDWL**
-draft FMS – **none for fixed steps to be flown, draft for Quick Release Maintenance Step emailed Sept 20**
-flight test plan* **- None – Michel will fly without prior company flight test.**
-conformity (Aero first, then TCCA) – **last set of parts required for test to be completed tomorrow, conformity to follow**
-flight permit conditions* **- to be determined**
-applicant flight test results - **None**
-DAR release for TCCA flight test – **will be ready prior to flight test**

all the usual stuff.

Regards,

J.H. (Jack) Staal
Aircraft Certification Technologist | Technologue, Certification des aeronefs.
Prairie and Northern Region | Region des Prairies et du Nord

Telephone | telephone: (780)495-5227
Facsimilie | telecopier: (780)495-7963
Email | courriel: jack.staal@tc.gc.ca
TTY / ATS : 1-888-675-6863

Transport Canada | Transports Canada
1100- 9700, Jasper Avenue | avenue Jasper (RAED)
Edmonton, AB T5J 4E6
Government of Canada | Gouvernement du Canada
To provide feedback to TCCA, use CAIRS. See: <http://www.tc.gc.ca/CivilAviation/ManagementServices/QA/cairs.htm>

Pour tout commentaire a TCAC, utilizer CAIRS. Voir
<http://www.tc.gc.ca/AviationCivile/ServicesdeGestion/AQ/ssqac.htm>

Jeff Clarke

From: icefieldheli@gmail.com on behalf of Ralph Sliger [ralph@kmheli.com]
Sent: October 4, 2010 10:13 AM
To: Jeff Clarke
Cc: Jeff@kmheli.com; Réjean Lavoie; aaron munster
Subject: Re: FW: Flight Permit

Hi Jeff C.

Thanks for this. I was under the impression that the date had been pushed back to next week. I will make IYO available for Wednesday but can you please let me know how late in the pm we can arrive at Springbank?? The later the better as we have a 330 pm tourist bus to fly until 430 pm. Will TC fly after 5 pm?

Regards,

Ralph Sliger
President/CEO
KANANASKIS MOUNTAIN HELICOPTERS
LTD

"THE MOST POWERFUL EXPERIENCE IN THE ROCKIES."

Icefield Heli Tours Canada (since 1999), - Sightseeing, Hiking, Yoga, Weddings and Fishing
Kananaskis Heli Tours Canada (since 2009)- Sightseeing
Kananaskis Mountain Helicopters Ltd (since 1994) - Charters, Medivac and Forest Fires
Heli Productions (since 1994) - Film, Movies, Commercials and Documentaries

ralph@kmheli.com
www.kmheli.com www.icefieldheli.com www.kheli.com www.heliproductions.com
Cline River Heliport Phone: 403-721-2100 Fax: 403-721-3779
Administration: 403-844-4443 & Fax 403-844-4499
Toll Free: 1-888-844-3514 (Canada and North America only.)
Kananaskis Heliport Phone: 403-881-2500 Fax: 403-881-2510
Kananaskis Toll Free: 1-877-591-0222
Nakoda Hangar Ph. (403) 881-3728 Fax. (403) 881-3748
Nakoda Toll Free 1-866-844-4484

On Mon, Oct 4, 2010 at 9:58 AM, Jeff Clarke <jeff@aerodesign.ca> wrote:

> Ralph,
>
> Please find attached the flight permit for C-GIYO. I will have the original on the day of the flights.

Flights are planned for Wednesday, October 6. Time is still to be determined, but will be in the afternoon.

Jeff Clarke

AERO Design Ltd.

From: Wickens, Murray [mailto:murray.wickens@tc.gc.ca]
Sent: October 4, 2010 7:20 AM
To: 'Jeff Clarke'
Subject: RE: Flight Permit Application

Jeff;

Please find attached the flight permit for A/C C-GIYO. The original with receipt will be available for pickup at the front counter in the Aero Design File.

Regards

Murray Wickens
Civil Aviation Safety Inspector / Inspecteur de la sécurite de l'Aviation civile
Tel / Tél (403) 292-4133 | facsimile / téléc (403) 292-6709 | TTY / ATS (613) 990-4500
E-Mail: murray.wickens@tc.gc.ca Courrier électronique: murray.wickens@tc.gc.ca
Transport Canada | Calgary Transport Canada Centre (RACH), 800, 1601 Airport Road N.E., Calgary, Alberta T2E 6Z8
Transports Canada | Centres de Transports Canada (RACH), 1601, route Airport N.-E., bureau 800, Calgary, Alberta T2E 6Z8

Government of Canada | Gouvernement du

Transport Canada / Transports Canada

FLIGHT AUTHORITY

AUTORITÉ DE VOL

To - À:
Kananaskis Mountain Helicopters

Box 2, Site 7, RR2, Rocky Mountain House, Alberta, T4T 2A2

Nationality and Registration Marks Marques de nationalité et d'immatriculation	Aircraft Manufacturer and Model Constructeur et modèle de l'aéronef	Aircraft Serial Number Numéro de série de l'aéronef
Canadian C-GIYO	Eurocopter AS350BA	2274

☐ **CERTIFICATE OF AIRWORTHINESS** **CERTIFICAT DE NAVIGABILITÉ**

In respect of the noise emission standards this aircraft:
En vertu des normes d'émission de bruit, l'aéronef mentionné:

☐ is not required to comply with requirements
n'est pas obligé de satisfaire aux exigences

☐ complies with the requirements specified below
satisfait aux exigences précisées ci-dessous

☐ **SPECIAL CERTIFICATE OF AIRWORTHINESS** **CERTIFICAT SPÉCIAL DE NAVIGABILITÉ**

☐ Provisional - Provisoire ☐ Amateur-Built - Construction amateur ☐ Owner Maintenance - Maintenance par le propriétaire

☐ Restricted - Restreint ☐ Limited - Limité

This document is subject to the following operating conditions of issue: Le présent document est assujetti aux conditions d'exploitation suivantes : ▶ Indicate Numbers: Inscrire les numéros :

The aircraft may only be operated from:
L'aéronef ne peut être exploité qu'à partir de :

Gross take-off weight not to exceed:
Ne pas excéder la masse maximale brute au décollage :

_____ lb _____ kg

☐ As per Flight Manual - Selon le manuel de vol

☑ **Flight Permit - Specific Purpose**
Permis de vol - Fin Spécifique

☐ **Flight Permit - Experimental**
Permis de vol - Expérimental

☐ Ferry Flight
Vol de convoyage

☐ Demonstration, market survey or crew training
Vol de démonstration, étude de marché ou formation d'équipage

☐ Importation or exportation flight
Vol pour fin d'importation ou d'exportation

☑ Other temporary purposes (Specify)
Pour d'autres fins temporaires (Préciser) Flight to VD Ref: NAPA C-10-0716

Flight from - Vol de	To - À	To - À
Springbank Airport CYBW	Local	Springbank Airport CYBW

This document is subject to the following operating conditions of issue: Le présent document est assujetti aux conditions d'exploitation suivantes : ▶ Indicate Numbers: Inscrire les numéros : See Attached 24-0090

The aircraft may only be operated from:
L'aéronef ne peut être exploité qu'à partir de :

Gross take-off weight not to exceed:
Ne pas excéder la masse maximale brute au décollage :

_____ lb _____ kg

☑ As per Flight Manual - Selon le manuel de vol

This document is valid for the number of days indicated on the right, following the date of issue. Where pertinent, a replacement flight authority will be issued to you. Le présent document reste valide pendant le nombre de jours indiqués à droite qui suivent la date de délivrance. S'il y a lieu, une autorite de vol de remplacement vous sera délivré. ▶ Days - Jours: 30

For the Minister of Transport - Pour le ministre des Transports	Date of Issue - Date de délivrance (yyyy-mm-dd / aaaa-mm-jj)	Region - Région
Murray Wickens	2010-10-04	PNR

TCR 334 Canada

Fee paid - Montant versé $ 45.00

☑ Cash - Comptant ☐ Cheque - Chèque Receipt No. - N° du reçu 1785892

Canada

24-0075 (0712-02) COPY 1 - COPIE 1

Transport Canada / Transports Canada

Kananaskis Mountain Helicopters

Operating Conditions - Conditions d'exploitation

Nationality and Registration Marks Marques de nationalité et d'immatriculation	Aircraft Manufacturer and Model Constructeur et modèle de l'aéronef	Aircraft Serial Number Numéro de série de l'aéronef
C-GIYO	Eurocopter AS350BA	2274

Operating Conditions - Conditions d'exploitation

1. Use as a commercial aircraft prohibited.

2. Crew members only, no passengers.

3. Aircraft to be certified as safe and fit for flight by a qualified AME in the aircraft journey log book prior to flight.

4. Flight testing is to be conducted away from built-up areas, airways, and air routes except during takeoffs and landings.

5. Day VFR conditions only.

6. Permission of foreign flight authority is required prior to flight in their airspace.

7. Flight into known or predicted icing conditions is prohibited.

8. Flight to VD is authorized (Ref: NAPA C-10-0716). Test must be stopped at any point before reaching this airspeed if excessive vibration or buffeting is experienced.

NOTE 1: The aircraft must be operated in compliance with the applicable standards of airworthiness.
L 'aéronef doit être exploité conformément aux normes de navigabilité applicables.

Seal
Sceau

TCR-314

2010-10-01
Date of Issue
Date de délivrance
(yyyy-mm-dd / aaaa-mm-jj)

Murray Wickens
For the Minister of Transport - Pour le ministre des Transports

Canada

24-0090 (0710-03)

Canada

Kananaskis

Mountain Helicopters LTD.

FAX COVER SHEET

Box 2, Site 7, R.R#2 Rocky Mountain House, Alberta, T4T 2A2
Phone: 1.403.844.4443 Fax: 1.403.844.4499
E-mail: Ralph@icefieldheli.com

Send to: Eagle Copters	From: Kananaskis Mnt. Hel.
Attention: Jeff Lambert	Office Location: Cline River
Office Location: Calgary	Date: Sept 30/10
Fax Number: 1-403 250 7110	Phone Number: 403 721 2100

☐ Urgent ☒ Reply ASAP ☐ Please Comment ☐ Please Review ☐ FYI

Total pages, including cover: ☐

Comments:

Please sign and send to Aero Design

AERO DESIGN LTD.
2013 – 39th Ave N. E., Calgary, Alberta, T2E 6R7 www.aerodesign.ca

FAX COVER SHEET

DATE:	September 30, 2010	TIME:	10.52 AM
TO:	**Ralph Sliger**	PHONE:	403-721-2100
	Kananaskis Mountain Heli.	FAX:	403-721-3779
FROM:	J. Clarke	PHONE:	403-250-8027
	Aero Design Ltd.	FAX:	403-250-8333

Number of pages including cover sheet: 2

RE: AS350 FLIGHT STEPS FLIGHT PERMIT APPLICATION

Ralph,

Attached is the flight permit application for our flight testing. We would like to do the tests in Springbank, please advise if that does not work for you.

Please have the bottom signatures completed and fax back to me.

Thank you,

Jeff Clarke

Transport Canada / Transports Canada

APPLICATION FOR A FLIGHT PERMIT

DEMANDE DE PERMIS DE VOL

INSTRUCTIONS
Print or type all entries. Reference *Canadian Aviation Regulations Standard 507* for the use and disposition of the form

Dactylographier ou écrire en lettres moulées. Consulte Règlement de l'aviation canadien norme 507 du Manuel de navigabilité qui précise la façon de remplir et d'acheminer le présent formulaire

A. AIRCRAFT IDENTIFICATION - IDENTIFICATION DE L'AÉRONEF

1. Owner - Propriétaire	3. Aircraft Manufacturer - Constructeur de l'aéronef	4a. Model - Modèle
Kananaskis Mountain Helicopters	Eurocopter	AS350BA
2 Address - Adresse Box 2, Site 7, RR 2 Rocky Mountain House, AB T4T 2A2	4b. Maximum Permissible Take-Off Weight Masse maximale admissible au décollage 2100.13 Kg _____ lb	
	b Serial Number - Numéro de série 2274	6. Nationality and Registration Marks Marques de nationalité et d'immatriculation C-GIYO

B. PURPOSE OF FLIGHT PERMIT (Check applicable boxes) - OBJECTIF DU PERMIS DE VOL (Cocher la ou les case(s) voulue(s))

1. ☐ Ferry flights to a base for repairs or maintenance
Un vol de convoyage vers une base en vue de réparation ou de maintenance
2. ☐ Delivery, demonstration, market survey, or crew training flights
Un vol de livraison, de démonstration, d'étude de marché ou d'entraînement d'équipage
3. ☑ Flights for the purpose of showing compliance with airworthiness standards
Un vol de démonstration de conformité aux normes de navigabilité
4. ☐ Other purpose (Specify)
Autre fin (Préciser)

C. FLIGHT DESCRIPTION AND AIRCRAFT LIMITATIONS
Description of Flight(s) *Use attachment when appropriate*

DESCRIPTION DU VOL ET LIMITATIONS DE L'AÉRONEF
Description du ou des vol(s) *Joindre une feuille au besoin*

1. From - Aérodrome de départ	2. To - Aérodrome de destination	
Springbank Airport (YBW)	Springbank Airport (YBW)	
3 Via - Escales None	4. Effective date (yyyy - mm - dd) Date effective (aaaa - mm - jj) 2010-10-06	5 Termination date (aaaa - mm - dd) Date limite (aaaa - mm - jj) 2010-11-05

6. Aircraft does not meet the applicable airworthiness requirements as follows:
Raisons pour lesquelles l'aéronef ne satisfait pas aux exigences de navigabilité en vigueur :

Installation of cabin steps in accordance with AERO Design Ltd. DCL827-3, Rev. 4.
Flight to Vd (1.1 x Vne) required.

7 The following maintenance conditions are considered necessary for safe operation
Les conditions d'entretien suivantes sont nécessaires pour la conduite des vols en toute sécurité .

Aircraft certified as safe and fit for flight by a qualified AME in the aircraft journey logbook prior to flight.

8. The following operating conditions are considered necessary for safe operation:
Les conditions d'exploitation suivantes sont nécessaires pour la conduite des vols en toute sécurité :

-DAY-VFR conditions
-No flight over built up areas
-Essential crew only
-Flight to Vd is permitted

D. SIGNATURES

I hereby certify that the aircraft described above is in a condition for safe operation.
Je, soussigné, certifie que l'aéronef décrit ci-dessus est en bon état de vol

KMHL 1 AMO 64-08

Signature, AME Licence No., ACA No. or RCA No.
Signature, N° de licence de TEA, N° d'autorisation ou N° d'autorisation restreinte

Sept. 29, 2010
Date (yyyy - mm - dd)
Date (aaaa - mm - jj)

and - et

RALPH SLIVER, PRESIDENT

Signature of the Registered Owner or Authorized Representative
Signature du propriétaire enregistré ou du représentant autorisé

2010/09/30
Date (yyyy - mm - dd)
Date (aaaa - mm - jj)

24-0044 (0710-06)

Canada

AERO **DESIGN LTD.**
2013 – 39th Ave N. E., Calgary, Alberta, T2E 6R7 www.aerodesign.ca

F A X C O V E R S H E E T

DATE:	September 30, 2010	**TIME:**	10:52 AM
TO:	**Ralph Sliger**	**PHONE:**	403-721-2100
	Kananaskis Mountain Heli.	**FAX:**	403-721-3779
FROM:	J. Clarke Aero Design Ltd.	**PHONE:** **FAX:**	403-250-8027 403-250-8333

Number of pages including cover sheet: 2

RE: AS350 FLIGHT STEPS FLIGHT PERMIT APPLICATION

Ralph,

Attached is the flight permit application for our flight testing. We would like to do the tests in Springbank, please advise if that does not work for you.

Please have the bottom signatures completed and fax back to me.

Thank you,



Jeff Clarke

Transport Canada / Transports Canada

APPLICATION FOR A FLIGHT PERMIT

DEMANDE DE PERMIS DE VOL

INSTRUCTIONS

Print or type all entries. Reference *Canadian Aviation Regulations Standard 507* for the use and disposition of the form.

Dactylographier ou écrire en lettres moulées. Consulte Règlement de l'aviation canadien norme 507 du Manuel de navigabilité qui précise la façon de remplir et d'acheminer le présent formulaire.

A. AIRCRAFT IDENTIFICATION - IDENTIFICATION DE L'AÉRONEF

1. Owner - Propriétaire	3. Aircraft Manufacturer - Constructeur de l'aéronef	4a. Model - Modèle
Kananaskis Mountain Helicopters	Eurocopter	AS350BA

2. Address - Adresse	4b. Maximum Permissible Take-Off Weight / Masse maximale admissible au décollage	
Box 2, Site 7, RR 2 Rocky Mountain House, AB T4T 2A2	2100.13 Kg	lb
	5. Serial Number - Numéro de série: 2274	6. Nationality and Registration Marks / Marques de nationalité et d'immatriculation: C-GIYO

B. PURPOSE OF FLIGHT PERMIT (Check applicable boxes) - OBJECTIF DU PERMIS DE VOL (Cocher la ou les case(s) voulue(s))

1. ☐ Ferry flights to a base for repairs or maintenance
   Un vol de convoyage vers une base en vue de réparation ou de maintenance
2. ☐ Delivery, demonstration, market survey, or crew training flights
   Un vol de livraison, de démonstration, d'étude de marché ou d'entraînement d'équipage
3. ☑ Flights for the purpose of showing compliance with airworthiness standards
   Un vol de démonstration de conformité aux normes de navigabilité
4. ☐ Other purpose (Specify)
   Autre fin (Préciser)

C. FLIGHT DESCRIPTION AND AIRCRAFT LIMITATIONS / DESCRIPTION DU VOL ET LIMITATIONS DE L'AÉRONEF

Description of Flight(s) ***Use attachment when appropriate*** / **Description du ou des vol(s)** ***Joindre une feuille au besoin***

1. From - Aérodrome de départ	2. To - Aérodrome de destination	
Springbank Airport (YBW)	Springbank Airport (YBW)	
3. Via - Escales	4. Effective date (yyyy - mm - dd) / Date effective (aaaa - mm - jj)	5. Termination date (aaaa - mm - dd) / Date limite (aaaa - mm - jj)
None	2010-10-06	2010-11-05

6. Aircraft does not meet the applicable airworthiness requirements as follows:
   Raisons pour lesquelles l'aéronef ne satisfait pas aux exigences de navigabilité en vigueur :

Installation of cabin steps in accordance with AERO Design Ltd. DCL827-3, Rev. 4.
Flight to Vd (1.1 x Vne) required.

7. The following maintenance conditions are considered necessary for safe operation:
   Les conditions d'entretien suivantes sont nécessaires pour la conduite des vols en toute sécurité :

Aircraft certified as safe and fit for flight by a qualified AME in the aircraft journey logbook prior to flight.

8. The following operating conditions are considered necessary for safe operation:
   Les conditions d'exploitation suivantes sont nécessaires pour la conduite des vols en toute sécurité :

-DAY-VFR conditions
-No flight over built up areas
-Essential crew only
-Flight to Vd is permitted

D. SIGNATURES

I hereby certify that the aircraft described above is in a condition for safe operation.
Je, soussigné, certifie que l'aéronef décrit ci-dessus est en bon état de vol.

Signature, AME Licence No., ACA No. or RCA No.
Signature, N° de licence de TEA, N° d'autorisation ou N° d'autorisation restreinte
and - et

Date (yyyy - mm - dd)
Date (aaaa - mm - jj)

Signature of the Registered Owner or Authorized Representative
Signature du propriétaire enregistré ou du représentant autorisé

Date (yyyy - mm - dd)
Date (aaaa - mm - jj)

Canada

Transport Canada Transports Canada

Canada

Current Information, directly from the Official Canadian Civil Aircraft Register database.

Aircraft Information

Mark: C-GIYO

Common Name: Aerospatiale **Model Name:** AS 350 BA

Serial No: 2274

Basis for Eligibility for Registration: Type Certificate - CAR Standard 507.02, 507.03 - H83

Category: Helicopter **Max take-off weight:** 2100.13 kgs

Engine: 1, Turbo Shaft

24-bit address: 110000000101110001000111

Regional Office: Edmonton **Year Imported:** 2001

Base of Operations: CANADA , Alberta, Rocky Mountain House

Manufacturer Information

Manufacturer: Aerospatiale

Country of manufacture: FRANCE **Year of Manufacture:** 1989

Registration Information

Type of Registration: Commercial

Owner Registered Since: 2010-10-01

Latest Certificate of Registration Issued: 2010-10-01

Last Registered Owner Information

Name: Kananaskis Mountain Helicopters Ltd

Address: Box 2 Site 7 RR2

City: Rocky Mountain House **Province/State:** Alberta

Postal Code: T4T 2A2 **Country:** CANADA

Region: Prairie and Northern

Mail Recipient: Yes

Transport Canada Transports Canada

Canada

Current Information, directly from the Official Canadian Civil Aircraft Register database.

Aircraft Information

Mark: C-GIYO

Common Name: Aerospatiale **Model Name:** AS 350 BA

Serial No: 2274

Basis for Eligibility for Registration: Type Certificate - CAR Standard 507.02, 507.03 - H83

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Engine: 1, Turbo Shaft

24-bit address: 110000000101110001000111

Regional Office: Edmonton **Year Imported:** 2001

Base of Operations: CANADA , Alberta, Calgary

Manufacturer Information

Manufacturer: Aerospatiale

Country of manufacture: FRANCE **Year of Manufacture:** 1989

Registration Information

Type of Registration: Private

Owner Registered Since: 2009-10-26

Latest Certificate of Registration Issued: 2009-10-26

Certificate of Registration: Cancelled 2010-06-10

Last Registered Owner Information

Name: Eagle Copters Ltd.

Address: 823 McTavish Road NE

City: Calgary **Province/State:** Alberta

Postal Code: T2E 7G9 **Country:** CANADA

Region: Prairie and Northern

Mail Recipient: Yes

AERO DESIGN LTD.
2013 – 39 Avenue N.E., Calgary, Alberta, T2E 6R7

Tel: 403-250-8027
Fax: 403-250-8333
www.aerodesign.ca

FAXED 9:25 AM

31 August 2010

Transport Canada
Aircraft Certification Division
11th Floor, Canada Place
9700 Jasper Avenue
Edmonton, Alberta
T5J 4E6

Attn: Jack Staal

Your File : C-10-0716
Our File : 827

Re: Eurocopter AS350 Step Installations

Jack,

Please find attached the following documents related to this project:

Modification Approval Request Application Form	MOD827	Rev. 1

Regards,

E. Burgoin, P.Eng, DAR 290M

Encl.

MODIFICATION APPROVAL REQUEST APPLICATION FORM

MOD827, Rev. 1

1. NAME AND ADDRESS OF APPLICANT:	2. IDENTIFICATION OF PRODUCT	
AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7	MAKE: Eurocopter	MODEL: AS350, AS355 All models
ALL CORRESPONDANCE TO: AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7	SERIAL No.: All Eligible	REGISTRATION: All Eligible

3. REQUEST FOR:

A.	SUPPLEMENTAL TYPE CERTIFICATE (STC)	☐	
B.	STC/STA REVISION	☒	STC/STA No. SH09-38 C-10-0716
C.	LIMITED SUPPLEMENTAL TYPE CERTIFICATE (LSTC)	☐	
D.	LIMITED STC/STA REVISION	☐	LSTC/LSTA No.
E.	F.A.A. SUPPLEMENTAL TYPE CERTIFICATE	☐	
F.	F.A.A. STC REVISION	☐	STC No.
G.	FAMILIARIZATION OF F.A.A. STC	☐	STC No.
H.	REPAIR DESIGN APPROVAL (RDC)	☐	
I.	PARTS DESIGN APPROVAL (PDA)	☐	

4. TITLE OF MODIFICATION OR REPAIR:

Step Installations

5. BRIEF DESCRIPTION OF MODIFICATION OR REPAIR:

Installation of various step products: Quick Release Maintenance Step; Peg Maintenance Step; Fixed Cabin Step.
Revision is to update for new configurations.

6. APPLICABLE TYPE APPROVAL (TA) OR TYPE CERTIFICATE (TC) DOCUMENTS:

A. TA NO. H-83, H-87 B. TC No. _____ C. OTHER _____

7. PROPOSED BASIS OF APPROVAL:

A. SAME AS TA ☒ B. SAME AS TC ☐ C. OTHER ☐ (Please specify) _____

8. DOCUMENTATION CHECKLIST	REQUIRED		FOR DOT USE ONLY RECEIVED		
	YES	NO	YES	NO	DATE
COMPLIANCE PROGRAM		X			
MASTER DRAWING LIST	X				
FLIGHT MANUAL SUPPLEMENT	X				
MAINTENANCE MANUAL SUPPLEMENT		X			
INSTRUCTIONS FOR CONTINUING AIRWORTHINESS	X				
ENGINEERING REPORTS	X				
DESIGN DRAWINGS		X			
MANUFACTURE DRAWINGS & INSTALLATION INSTRUCTIONS	X				
ELECTRICAL LOAD ANALYSIS		X			
DRAFT STC, LSTC OR RDA		X			
WEIGHT AND MOMENT CHANGE	X				
FLIGHT TEST DATA		X			
OTHER (Specify)					

9. APPLICANT'S REMARKS:

10. In addition to the payment of Aircraft Certification approval fees as prescribed in Canadian Aviation Regulations (CAR) Section 104, I agree to reimburse Transport Canada incremental expenses as in Aviation Regulation Directive No. 3, or equivalent, as applicable. For further details governing cost recovery, refer to AMA 513/4.

PER: _____ Consultant 27 July, 2010

SIGNATURE OF APPLICANTS | TITLE | DATE

11.

_____ _____

SIGNATURE OF REGIONAL ENGINEER | DATE